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WEEKLY NEW YORK—SATURDAY, FEBRUARY 6, 1904—CHICAGO 10 CENTS

Packard

WORLD'S RECORD

One Mile—46⅖ Seconds

Record made with Packard Voiture Legere, "Gray Wolf" driven by Mr. Chas. Schmidt, at Ormond-Daytona Beach, January 3, 1904. In the series of record trials in which above time was made, this machine made one mile five consecutive times in 46 2-5, 47, 46 4-5, 47 and 46 3-5 seconds respectively.
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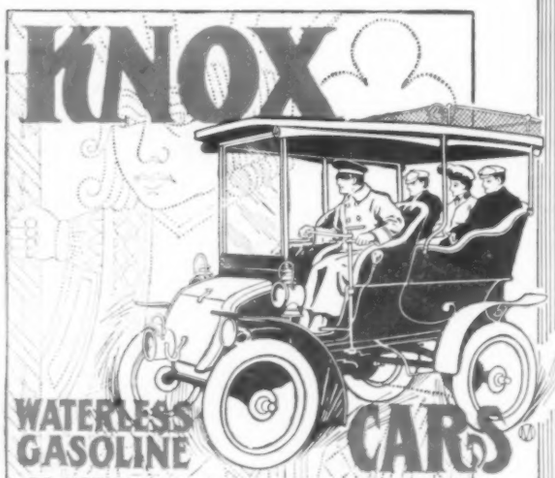

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Story of the Florida Tournament.

FROM OUR OWN CORRESPONDENT.

ORMOND, Jan. 30.—Viewed from almost any standpoint, automobile races on the beach in Florida are a success. Imagine a perfectly straight speedway reaching away as far as the eye can see without a break and with nothing to distract the driver's attention from his car; on one side the broad Atlantic and on the other, one hundred feet away, the loose sand beyond the tide limit. Smooth as a billiard table and hard almost beyond belief is this magnificent stretch of beach. Nowhere in the world can be found a race course on which the driver of a mile-a-minute automobile can feel a greater sense of freedom and security.

It is impossible to find a faster track in the world than this beach between Ormond and Daytona. So hard is it that the heaviest machines make no impression in the sand, and so smooth that even when going a mile in forty seconds there is almost no road vibration.

The location, particularly in winter, is well suited to an automobile tournament. Florida, with its magnificent climate and good hotels, is always attractive in cold weather and it needs but little inducement to bring people here. An automobile meet, therefore, serves to draw from all parts of the country a representative gathering of those interested in the sport. This winter's tournament has brought a goodly attendance of those whose names are synonomous with automobilism. On Saturday, Sunday and Monday the special

LAUNCH "UNCLE SAM" ON THE HALIFAX RIVER CARRYING SIGHTSEERS TO THE ORMOND-DAYTONA BEACH RACES.

Florida trains brought parties to the rendezvous at Ormond, and to-night (Tuesday) the hotels are filled with expectant motorists.

Among the first to arrive were Mr. and Mrs. Harlan W. Whipple, Mr. and Mrs. Howard Gould, Mr. and Mrs. George E. Farrington, Mr. and Mrs. Charles C. Scaife, Mr. and Mr. J. L. McGinness, Mr. and Mrs. C. L. Willoughby, and Messrs. William Wallace, W. Gould Brokaw, James L. Breese, W. K. Vanderbilt, Jr., S. B. Stevens, Walter Christie, Walter C. Baker, A. S. Mann, Col. R. L. Thompson, and L. L. Borden.

The first large party to leave the North started Sunday noon and arrived in Ormond Monday night. A special car had been provided by the Seaboard Air Line and the trip down was most enjoyable, being agreeably broken by a stop of six hours in St. Augustine, where the entire party enjoyed exploring the quaint old town. In this party were Mr. and Mrs. Augustus Post, Mr. and Mrs. A. R. Pardington, Mr. and Mrs. C. H. Gillette, Mr. and Mrs. Emerson Brooks, Mr. and Mrs. S. M. Butler, Mr. and Mrs. A. L. Riker, Mr. and Mrs. Frank X. Mudd, and Messrs. A. D. Proctor Smith, William H. Hall, George Tangeman, H. M. Adams, B. M. Shanley, F. E. Spooner, A. G. Batcheller, A. R. Reeves, J. C. Wetmore and William Shaw

All day Tuesday and Wednesday the arrivals kept coming and by Thursday morning, the time set for the races, Daytona and Ormond were filled with a most enthusiastic gathering of automobilists. Among the later arrivals were Winthrop E. Scarritt, Santos-Dumont, W. C. Temple, George H. Flinn, S. A. Miles, F. A. LaRoche, A. Ward Chamberlain, F. G. Bourne, A. F. Comack, E. E. Britton, Angus Sinclair, R. G. Betts, J. C. Kenison, A. L. McMurtry, Norris Mason, A. J. Pickard, H. G. Elliott and E. E. Schwartzkopf.

The Florida East Coast Automobile Association has an active membership of forty, and these members, together with their friends and guests and the visiting automobilists from the North and West, make up a considerable assemblage.

The two towns, between which the races are held, are very interested and active in doing everything in their power to make the meet a success, and much credit is due the local authorities and hotels for their part in the arrangements for handling the meet.

ATTRACTIVE LOCATION OF THE COURSE.

Ormond and Daytona are about seven miles apart and the beach which connects them extends beyond in both directions for many miles. The towns are about seventy miles below St. Augustine and are situated on the "land side" of the Halifax, or, as it is called farther South, the Indian River. Some of the hotels and the beach itself are on the narrow strip of land, only about a half mile wide, which separates the river from the ocean.

The Tamoka River, a little above Ormond, is one of the interesting side trips. With its tropical foliage, its alligators and its good fishing, it is the most interesting spot in the vicinity and well worth a day's investigation.

The beach is, of course, the principal attraction for automobilists, and it must be seen and ridden on to be appreciated. The shell roads in the neighborhood are fairly good for automobiles, and would be splendid if kept in repair. A project is on foot now to build a first-class road all the way from Jacksonville to Palm Beach. When it is completed, it will be one of the most delightful roads imaginable. The entire east coast is interested in this movement, and it is hoped that before long cars can be shipped by boat to Jacksonville and the tour down the coast to Palm Beach be made over a boulevard that will not be excelled in the world.

Records Fall on Wednesday.

WEDNESDAY.—Under bright skies and on a course whose condition for automobile speeding has never been equalled, the first day of racing brought forth two world's records in addition to deciding a most interesting contest between two owners of racing cars.

It was nearly 9 o'clock before the first event was called. The only events for the day were the special match races between W. G. Brokaw's Renault and Bernard Shanley's Decauville, and H. L. Bowden's Mercedes and S. L. Steven's Mercedes.

WILLIAM K. VANDERBILT, JR., IN GROUP OF TIMERS OF HIS WORLD'S RECORD MILE.

Both of these races were for fifteen miles, best two in three heats. In the first heat between the Renault, driven by Morris Bernin, and the Decauville driven by Edward Fredericks, the start was made under a misunderstanding before the timing apparatus was ready, but by agreement of the owners the heat was allowed to stand. It resulted in the Renault winning by nearly a minute. The second heat was much closer and provided an exciting finish, the Renault winning by only about two seconds. The time for the fifteen miles was 12 minutes 51 4-5 seconds The prize for this race was a magnificent $500 silver cup subscribed for by the two contestants.

Considerable time was consumed in running these two heats, as the cars had to return against a head wind and cover altogether, between starts, thirty miles. There was just beach enough left by the incoming tide for one heat of the Bowden-Stevens match and a mile trial by W. K. Vanderbilt, Jr.

Bowden-Stevens Close Match.

Mr. Bowden and Mr. Stevens have the same make and size of cars—60-hp. Mercedes—and the race between them was fast and close. The time—10:18—beats all records, and at the finish Mr. Bowden was only 11 seconds ahead of Mr. Stevens. The owners drove their cars, making the event doubly interesting. The average time per mile was 41 seconds. This is so hard to believe that even many who are familiar with the speed capabilities of such machines have expressed doubt as to the accuracy of the timing, but inasmuch as every detail has been verified by the experts in charge of the timing, it is safe to believe that the figures which they give out officially are right.

Vanderbilt's Mile in 39 Seconds.

Perhaps the most interesting event of the day was the trial of Mr. Vanderbilt for the world's mile record. There was not time to arrange the instruments for this short distance, and the time was taken by watches at the start and finish. All of the watches used were started together at exactly the same instant. Then the timers separated and took positions at the start and finish. As the car crossed the starting line all of the watches at that point were stopped and as it reached the finish the watches there were stopped. Then the average time of the watches at the start was subtracted from the average time of the watches at the finish and the result gave the time for the mile. The watches at the start were held by H. M. Adams, J. L. McGinnis, W. T. Leighton, Al. Reeves, and W. L. Thompson. At the finish the timers were A. D Proctor Smith, A. G. Batcheller and William H. Hall.

There was great enthusiasm on the beach when the time—39 seconds—was announced and the crowd realized that not only the road record, but also the ice

PANORAMIC VIEW OF THE ORMOND-DAYTONA, FLORIDA BEACH, DURING THE RECORD BREAKING RACES.—*Photographed for* The Automobile *by Hemment.*

Sand Dunes and Beach Houses. *Spectators Along the Ropes.* *Contestants Ready for Flying Start.* *Surf on the Beach.* *Starter Pickard at Work.*

MAURICE BERNIN AT THE WHEEL OF MR. BROKAW'S 30-HP. RENAULT RACER.

record recently made by Ford, had been broken. Mr. Vanderbilt was heartily congratulated and the hope was expressed on all sides that before the meet was over he might lower these figures.

All of the conditions for this marvelous performance were perfect. The beach was absolutely smooth and hard and there was a strong wind blowing straight down the course. Everything was favorable to fast time and Mr. Vanderbilt handled his car perfectly. He took about two miles for his flying start and when he crossed the starting line he was getting the utmost possible speed out of the car. It seems almost impossible that his time can be lowered except by a higher powered and relatively lighter car.

When this record trial was finished the tide was too high to permit of any more events and everything was postponed until the following day. The result of the day's work was very satisfactory to the spectators and was a most encouraging start for the meet.

Good Roads Subscription Ball.

In the evening a subscription ball for the benefit of the National Good Roads Association was given in the casino at the Hotel Ormond. The casino was beautifully decorated for the occasion and the hotel orchestra provided good music for the dancing. Nearly all of the guests at the hotel attended and as a social event the ball was a delightful contrast to the more strenuous work on the beach. There is an almost ideal spirit of fellowship and sociability among the party and as the racing occupies only about four or five hours each day, there is much opportunity for enjoyment of the social features of the tournament

Tedious Work Thursday.

Thursday.—The second day of the meet did not bring forth anything of sensational interest. In fact, the program dragged tediously, owing to a combination of unfortunate circumstances for which no one in particular was responsible. The general conditions were by no means as satisfactory as on Wednesday. The beach was not so smooth and there was not quite so strong a wind from the north to help.

To-day's races were held at the Daytona end of the beach and were announced to commence at 8 o'clock sharp. A large crowd assembled on the beach early in the morning and waited patiently to see the start. The first event was the mile championship of the American Automobile Association, free-for-all. There were seven entries and all of them faced the starter. It was decided to run the race in two heats. In the first W. K. Vanderbilt, Jr., and H. L. Bowden, in their Mercedes, and E. Fredericks in B. M. Shanley's Decauville, made a pretty start. The heat was won by Mr. Vanderbilt in 48 4-5 seconds, with Mr. Bowden second in 50 seconds.

The second heat was between S. B Stevens' Mercedes, F. A. LaRoche's Darracq, W. B. Brokaw's Renault, driven by Morris Bernin, and the Winton Bullet No. 2, driven by Barney Oldfield. The start was very trying as three attempts were made before the cars finally got away together. So much time was consumed in lining up at the start that the Darracq caught fire from the exhaust and on account of burning a water connection was unable to start. The other three finally got away and the heat was won by Oldfield in 43 seconds, with Stevens second in :45 2-5.

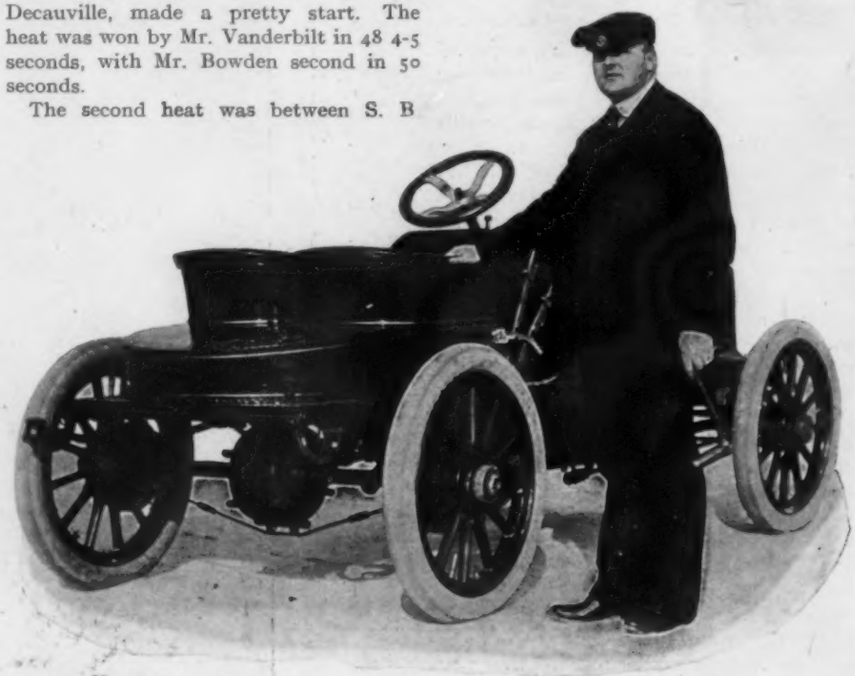
Oldfield Wins From Vanderbilt.

The winners of the two heats and the fastest second man were eligible for the final, which was, therefore, between Vanderbilt, Oldfield and Stevens. There was much speculation as to the result of this meeting between the Winton and the Mercedes and excitement ran high as the cars crossed the line together.

It was a battle royal and the result from the finish a mile away was impatiently awaited by the crowd at the starting line. When it was telephoned that Oldfield had won in 46 2-5 seconds, with Vanderbilt second in 49 3-5, there were some who expressed surprise and others who said, "I told you so." There was some question as to why the time of the two cars should have been so much slower than in previous trials. It seemed to many that they crossed the starting line slower than before, owing to a little difficulty in keeping together up to the tape. Each driver did his best, however, and it was a clean and well-earned race.

One Heat in Class B Invitation.

The timing instruments were set for one mile and as the second race, contrary to



B. M. SHANLEY STANDING BESIDE HIS 40-HP. DECAUVILLE RACING CAR.

A Group of Spectators Including Mr. and Mrs. Howard Gould and Mrs. Kissam.

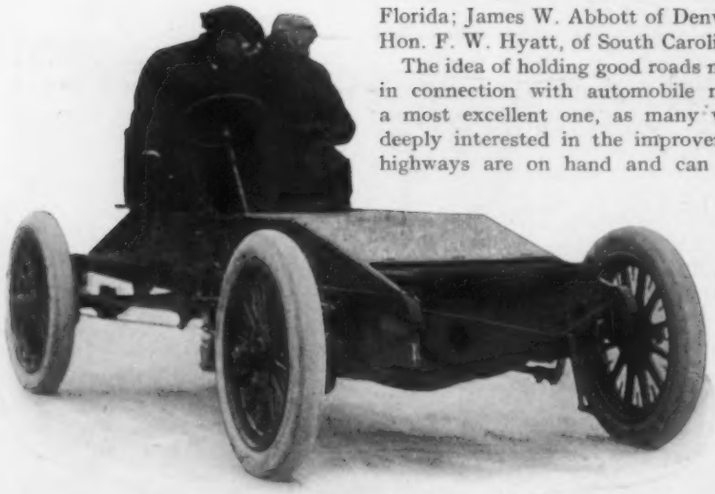
President Winthrop E. Scarritt, A. C. A., and Party in Palm Decorated Horse Car.

View Showing the General Lay of the Course—Atlantic Ocean on the Right.

Start of Final Heat in the Five Mile Race.

Secretary S. M. Butler, A. C. A., Operating the Mors Timing Apparatus at the Starting Point.

SNAP SHOTS OF INTERESTING SCENES AND EVENTS AT THE 1904 MEETING OF THE FLORIDA EAST COAST AUTOMOBILE ASSOCIATION.



BARNEY OLDFIELD READY TO START IN 5-MILE RACE IN BULLET No. 3.

the program, was for five miles, considerable time was lost in moving the apparatus to the five-mile mark. In fact, so much time was lost in getting ready for the next event that it was impossible to run more than one heat of it.

The race was the five-mile invitation for Class B vehicles, open only to gentlemen amateurs. Through a misunderstanding three of the cars got away before the instruments were ready and it was declared no heat. So the only heat of this race run to-day was between James L. Breese (Mercedes), William Wallace (De Dietrich) and A. D. P. Smith (Panhard). They got away nicely and the heat was won by Mr. Breese in 5 minutes 18 3-5 seconds, with Mr. Wallace second.

This ended the day's racing, as the beach was too narrow for further events. The crowd that had come down to Daytona from Ormond was much disappointed. The contestants also were dissatisfied on account of the delays.

In the afternoon the committee of the Florida East Coast Automobile Association who had charge of the meet, met the officials from the American Automobile Association and a plan was agreed upon whereby the A. A. A. officials took charge of the affairs. A rearrangement of the program was decided upon and some new rules made governing the races. The officials remained the same with the exception that C. H. Gillette, A. L. Riker and George E. Farrington were appointed clerks of the course.

National Good Roads Convention.

Thursday evening the National Good Roads Association held a convention at the Daytona Opera House which was well attended by automobilists from Ormond and Daytona. The meeting was opened by Mayor C. L. Smith of Daytona, and interesting addresses were made by Gov. W. S. Jennings of Florida; W. P. Moore, president of the National Good Roads Association; Senator W. S. Mann of Florida; James W. Abbott of Denver, and Hon. F. W. Hyatt, of South Carolina.

The idea of holding good roads meetings in connection with automobile meets is a most excellent one, as many who are deeply interested in the improvement of highways are on hand and can present ideas enthusiastically to the local residents who are interested in the movement and give them much information of practical value.

Vanderbilt the Star Friday.

Friday.—William K. Vanderbilt, Jr., carried away the honors of today's racing, winning three of the eight events that were run. His most remarkable performance was in the final of the free-for-all five-mile race, in which he made a new record of 3:31 3-5 for the distance, an average of 42 3-5 seconds to the mile.

Vanderbilt and Oldfield did not meet in this event, although both qualified for the final, the former winning his heat in 3:40, with H. L. Bowden (60-hp. Mercedes) second in 3:55 1-5. Oldfield's time in the first heat of this race was 3:48 4-5. F. A. La Roche (40-hp. Darracq) was second to Oldfield in 4:01 2-5.

After the finish of the first heat of the free-for-all Oldfield started for the tape, but did not reach the starting point, as he broke his crankshaft, which put him out of the running for the final of the event. This was the source of keen disappointment to the spectators, as a battle between the Winton Bullet and the Mercedes promised a thrilling finish.

The one-mile invitation was run in heats, the first won by H. L. Bowden (60-hp. Mercedes) in :51 4-5 with W. Gould Brokaw (40-hp. Renault) second. The second heat was won by W. K. Vanderbilt, Jr., in :47 3-5, with S. B. Stevens (60-hp. Mercedes) second. Vanderbilt won the final in :48, with Bowden second.

Vanderbilt's third victory was in the five-mile invitation. The first heat, which was run yesterday, resulted in a win for J. L. Breese in 5:13 3-5. The second heat was won by Vanderbilt in 3:38 1-5, Stevens second. This brought three Mercedes cars in the final, which was taken by Vanderbilt with his 90-hp. machine in 3:34 3-5, with Stevens second in 3:41 4-5 and Breese third.

H. L. Bowden Takes Two Events.

The one-mile race for 1:05 class, cars in class A, brought out a string of fast machines. It was won by H. L. Bowden (60-hp. Mercedes) in :52 2-5; F. A. La-Roche (40-hp. Darracq) second, :55 1-5; J. Insley Blair (24-hp. Panhard), 1:06 3-5.

The next event was a mile race for :56 class, Class A cars, which was run in heats, H. L. Bowden won the first heat in :48.

WILLIAM K. VANDERBILT, JR., HOLDER OF NEW WORLD'S MILE RECORD.

TRACKS MADE IN THE SAND AT THE OUTER TURN IN THE 50-MILE RACE—SHORT RADIUS CIRCLE MADE BY VANDERBILT.

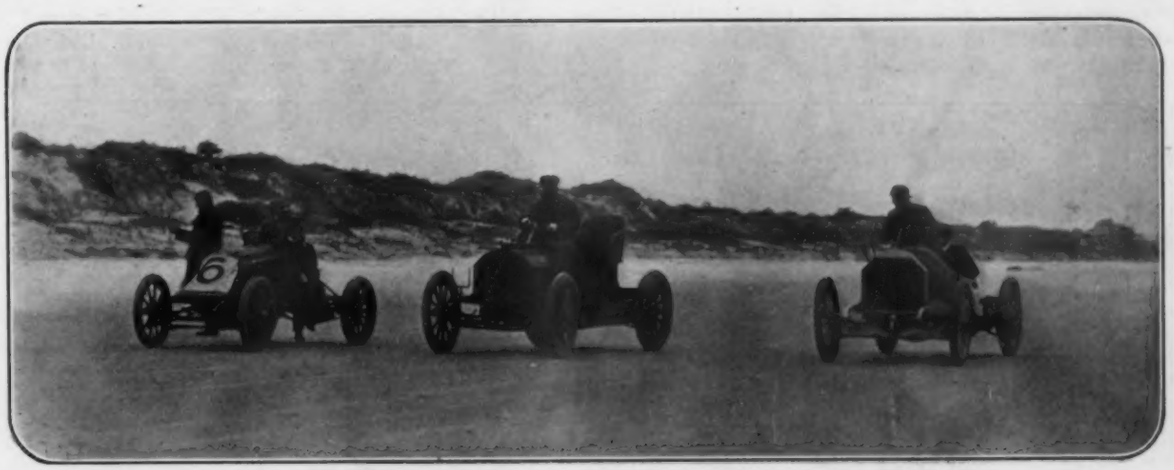
The final was taken by Bowden in :50 4-5 with La Roche second.

An agreeable diversion was furnished by the one-mile motorcycle race which followed and in which there were three starters—G. H. Curtiss (5-hp. Curtiss), Oscar Hedstrom (5-hp. Indian), W. W. Austin (1 3-4 hp. Indian) The race was won by Curtiss in :59 1-5, with Hedstrom second in 1:04, and Austin third in 1:09 1-5.

The five-mile race for runabouts had but two starters, Louis S. Ross (6-hp. Stanley steamer), and Hugh L. Willoughby (11-hp. Autocar). The winner was Ross, who covered the distance in 7:53 1-5.

S. B. Stevens Captures Five-Mile Handicap.

The last event of the day was the five-mile handicap, which brought out seven starters. B. M. Shanley had some trouble with his car at the tape and withdrew from the event, and W. Gould Brokaw also pulled out. The race was won by S. B. Stevens (60-hp. Mercedes) from scratch in 4:00 2-5; Joseph Tracy (70-hp. Peerless), with a handicap of five seconds, finished second in 4:28 1-5; F. A. La Roche (40-hp. Darracq), 35 seconds handicap, third in 5:05 1-5; and J. Insley Blair (35-hp. Panhard), 50 seconds handicap, fourth in 7:46 1-5.



Brokaw. *Breese.* *Bowden.*

START OF THREE COMPETITORS IN FIRST HEAT OF ONE-MILE RACE.

W. GOULD BROKAW AT THE WHEEL OF HIS RENAULT RACING CAR.

with S. B. Stevens second in :48 4-5, and W. Gould Brokaw third in :49. The second heat fell to F. A. La Roche in :53 2-5, B. M. Shanley (40-hp. Decauville) running second in :57, and William Wallace (30-hp. De Dietrich) third in 1:23.

More Records Fall Saturday.

Saturday.—The big event of today's races was the A. A. A. fifty-mile championship, open to all classes, 1,000 pounds and over. It was won in the sensational time of 40:49 4-5 by William K. Vanderbilt, Jr., who finished nearly two minutes ahead of H. L. Bowden, second. In this event Vanderbilt captured all records above five miles, his intermediate times being as follows: 10 miles, 7:25; 20 miles, 17:02; 30 miles, 24:11; 40 miles, 33:52 2-5. In addition to this string of records, Vanderbilt won the ten-mile invitation and the ten-mile championship races, maintaining his daily number of three wins which he set up yesterday.

For the fifty-mile championship the course was laid off with a ten-mile stretch with turns at either end. The time was taken from end to end of the straights, the time consumed in making the turns not being considered and the total times being obtained by adding together the results for the five ten-mile stretches.

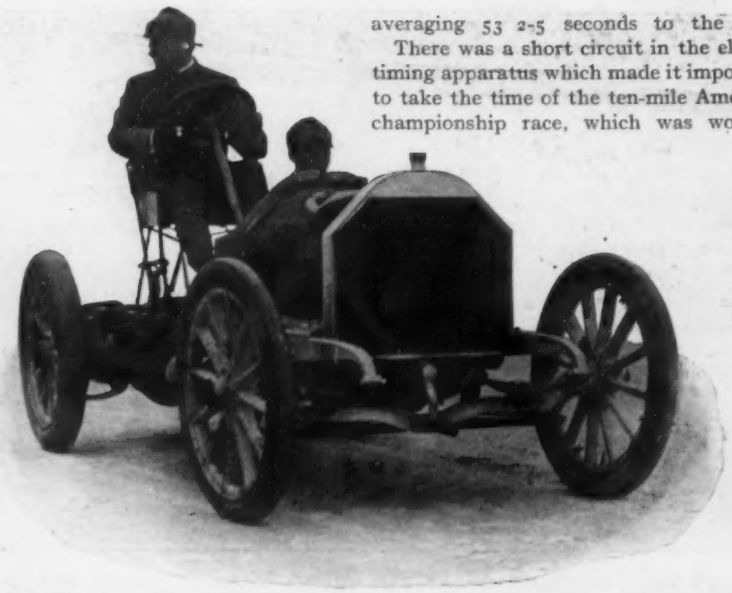
One of the prettiest features of the day was the swing around the loop at the Ormond end of the course in the fifty-mile race when Vanderbilt and Bowden came up but three seconds apart and turned at high speed around the ladder, Vanderbilt cutting in within less than five feet of the step ladder which marked the turn and Bowden almost as close.

Bowden's time for the fifty miles was 42:44 2-5, a close second to Vanderbilt's sensational record, and well ahead of the third finisher, M. W. Ehlich, who drove J. Insley Blair's Panhard in 57:08.

VANDERBILT TAKES OWNERS' RACE.

The ten-mile invitation race for owner drivers brought out a string of high-powered cars and resulted in a new mark for the distance, W. K. Vanderbilt winning in 6:50, with Stevens second, in 7:03 1-5; Bowden third and Breese fourth.

Oldfield did not drive today except to try for the ten-mile record with the four-cylinder Winton Bullet, doing the distance in 9:42 4-5.



H. L. BOWDEN IN 60 HP. STRIPPED MERCEDES READY TO START IN 50-MILE RACE.

averaging 53 2-5 seconds to the mile.

There was a short circuit in the electric timing apparatus which made it impossible to take the time of the ten-mile American championship race, which was won by Vanderbilt with Bowden second and E. Fredericks, driving for B. M. Shanley, third.

Stevens and Bowden met in two events

WALTER CHRISTIE IN HIS NEW FRONT WHEEL DRIVE GASOLINE MACHINE STARTING FOR THE MILE.

One of the best performances of the day was the winning of the ten-mile motorcycle race by G. H. Curtiss in 8:54 2-5,

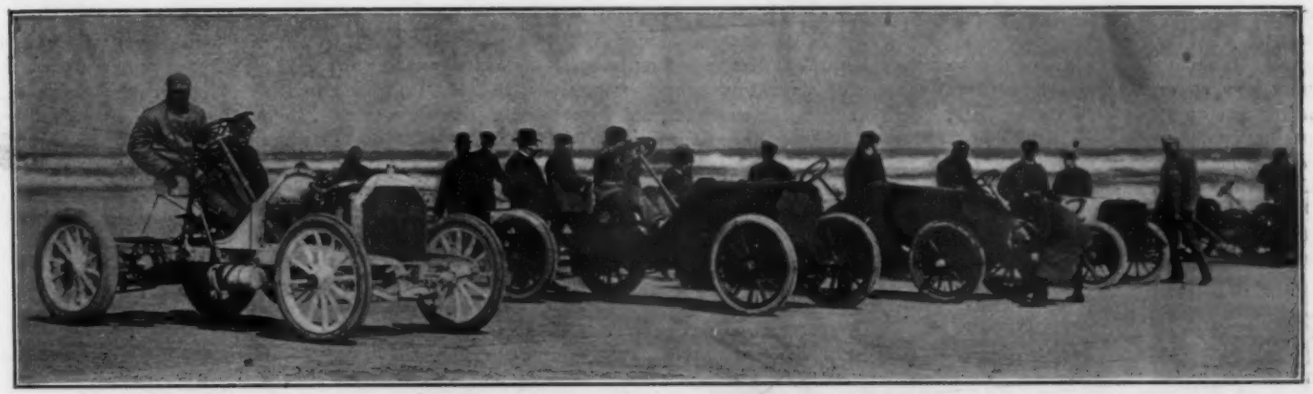
JAMES L. BREESE IN HIS 40 HP. MERCEDES AT THE STARTING POINT.

—the ten and twenty-mile handicap races, both starting from scratch. The ten-mile was won by Stevens in 7:28 4-5, with Bowden 10 seconds back. The twenty-mile handicap was won by Bowden in 18:40, Stevens second in 18:50 2-5.

A serious accident marred the day. M. W. Ehlich, driving J. Insley Blair's Panhard in the twenty-mile handicap, turned too short at the Daytona end of the course and one of the rear wheels giving 'way, the car turned over, pinning Ehlich underneath. His face was lacerated by the breaking of his goggles and his shoulder was badly hurt. He was hurried to a physician at Daytona who pronounced his injuries serious but not dangerous.

More Records Fall Monday.

MONDAY.—The conditions today were not favorable for new records, a stiff wind blowing directly across the course, and as a consequence no startling figures resulted



GETTING READY FOR THE START OF A LONG DISTANCE EVENT IN THE FLORIDA BEACH RACES.

from the record-breaking attempts. Charles Basel, in H. L. Bowden's 60-hp. Mercedes, tried for the mile, doing it in :43 2-5, which was duplicated by S. B. Stevens. Basel later tried for the kilometer record held by Duray, who covered the distance in 26 2-5 seconds, in a 100-hp. Gobron-Brillié on the Dourdan course, but the best Basel could do was to tie the figure—a remarkable performance considering the difference in horsepower of the cars.

Stevens and Bowden came together again in a ten-mile race, which was won by the former with Bowden but three lengths in the rear. No time was taken for this race.

Louis H. Ross, in a 6-hp. Stanley steamer, made three attempts for the mile record held by George C. Cannon and each time he sliced off several seconds, finally putting the mark at :55 2-5, which compares well with the other remarkable performances that have characterized the tournament. Ross covered the kilometer in :34 2-5.

The Baker Torpedo Kid, with W. J. Hastings driving, cut the mile electric vehicle record from 1:03 to 1:00 3-5 and covered the kilometer in :37 2-5.

A. R. Pardington, chairman of the A. A. A. racing board, and Alfred Reeves ran into the ocean Tuesday night. The wind was so high that the lamps of their automobile were extinguished and in the darkness the big Peerless car was piloted into the breakers. All hands piled out and tried to push the car beyond the line of the surf, but after an hour's struggle the machine was abandoned and the party walked four miles to Ormond. The automobile was recovered Wednesday, much the worse for salt water and sand.

HOWARD GOULD AND SANTOS-DUMONT.

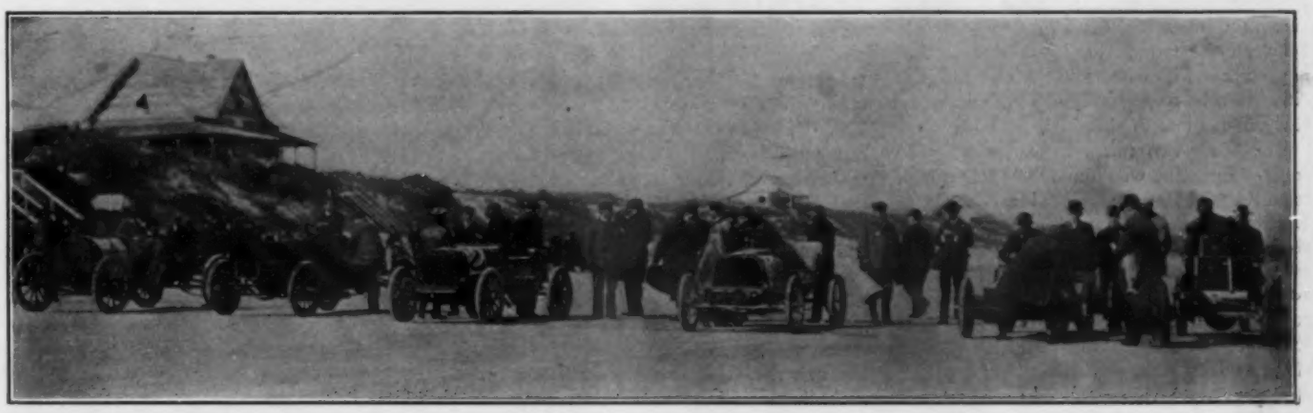
The officials of the racing and record-breaking trials were as follows: Referee, A. R. Pardington, chairman A. A. A. Racing Board; assistant referee, S. A. Miles; manager N. A. A. M.; judges, Angus Sinclair, A. C. A.; C. G. Burgoyne, F. E. C. A. A.; H. H. Seelye, president F. E. C. A. A.; John B. Parkinson, secretary F. E. C. A A.; Augustus Post, A. C. A.; S. H. Gove, treasurer F. E. C. A. A.; W. H. Peters, first vice-president, F. E. C. A. A.; John Anderson, second vice-president F. E. C. A. A.; Louis Adler, F. E. C. A. A. timer, S. A. Butler, secretary Automobile Club of America; assistant timers, Frank X. Mudd, Chicago Automobile Club; Peter Hart, J. C. Pettipher; clerk of course and starters, A. J. Picard, A. M. L. and A. A. A.; P. S. Steenstrup; scorers, Louis S. Clark, L. D. Fiske, Arthur Moulton, W. C. Jayne, Emerson Brooks, R. H. Welles, H. C. Orndorff, Bernard M. Shanley, Jr.; classification committee, F. A LaRoche, Oscar Hedstrom, R. E. Olds, Capt. Hugh L. Willoughby, W. E. Metzger, Dr. T. W. Wissinger, Harlan W. Whipple; reception committee, J. A. Hardwick, C. R. Oliver, C. A. Young, James B. Moore; prize and information committee, J. F Hathaway, John B. Parkinson, John Anderson, Louis Adler; race committee, J. F. Hathaway, W. H. Peters, C. G. Fitzgerald, Louis Adler.

(See Summaries on Page 180.)

Hausman Goes After Vanderbilt's Record.

Special Correspondence.

NEW HAVEN, Feb. 1.—Edward C. Hausman left this city to-day for Ormond Beach Fla., where he has been called by telegraph



LINE UP FOR 20-MILE HANDICAP, SATURDAY, JANUARY 30, WON BY H. L. BOWDEN, SCRATCH, IN 18:40.

to try to beat the automobile record made last week by W. K. Vanderbilt, Jr.

Mr. Hausman is a well-known ex-champion cyclist and pace follower, and is an expert operator of a motor car. The professionals expect to see him lower the Vanderbilt record, which was a decided shock to them. They will make use of the Ford-Cooper "999" with which Barney Oldfield made his first world's records and Henry Ford recently established the record of a mile in 39 2-5 seconds on the ice. This car is now on the way to Ormond from Philadelphia.

ON THE WAY TO THE ORMOND-DAYTONA BEACH RACES, AFOOT AND AWHEEL—TYPICAL FLORIDA SCENERY.

TWO DAYS THROUGH FLORIDA QUAGMIRES TO DAYTONA.

Although a number of Northern motorists started to tour to the Florida beach in time to be present at the Ormond-Daytona races, and others who were landed at Jacksonville by boat seriously contemplated making overland trips from that city to Daytona until informed that the roads were impassable, William R. Hill is the first man to drive an automobile between the two places. He was accompanied by his wife, who withstood the disagreeable features and tediousness of the journey uncomplainingly.

The forty-two miles from Jacksonville to St. Augustine was made over fair roads, following the line of the Florida East Coast Railroad, in four hours' actual running time. They intended to leave St. Augustine at daylight, but were delayed until 10 o'clock by rain. There was a shell road for the first five miles, which brought them to Moultrie, where they at once plunged into sand which was covered for a few miles with pine straw. They followed the Coopersville road for a distance and then took the King's road. They had been advised to stay over night at Charles Duyrant's, but upon arriving at his place they were told that the water was high ahead and were advised to retrace their way a few miles and go to Mr. Sturker's house, which was reached at 4 o'clock. But Mr. Sturker said the King's road was impassable on account of water and had been badly cut up by logging teams. He offered to pilot them in the morning across his land to the beach, so they stayed over night there, as they had gone five miles out of their way that day, owing to the fact that many of the intersecting roads were more traveled than the direct road and were misleading. Thus the day's run had landed them thirty miles from St. Augustine.

The following morning they got started at 7 o'clock, with Mr. Sturker leading the way on a horse.

"Within half a mile we were in muck up to our hubs," wrote Mr. Hill to a friend, "which meant getting men and plank to lift, and get the wagon to the hard soil once more. Time consumed about one hour and a half. Then followed all kinds of trouble—more muck, water, palmetto scrub and wire grass at least five feet high. This time we were so deep in the mud that our guide went back for a second horse, or rather a mule. By this time it was noon, and Mrs. Hill and the writer rode on the guide's horse to dry land, where we ate the balance of the lunch prepared for the day before, and which fortunately had not been thrown away.

"When the guide returned with the mule we managed to pull the wagon through the worst of it by using low speed and all working together. After a time we got into the bed of a stream with a sand bottom, and nearly a foot of water, through which the wagon was able to go by its own power. From this stream we turned into a palmetto forest when it became nccessary to go ahead and cut a path before the wagon could be got through. About 2 o'clock we cleared the forest and struck an old road, which, though grown up in palmetto scrub, we finally got over with our own power. About half a mile from the beach we struck a few bad sloughs, some over a foot deep, but the wagon, by backing and filling got through. At last, about 3 o'clock, we reached the high sand barrier at the shore. By taking out everything portable, and hitching on the horse and mule, and using our low speed, we made a grand rush, and most fortunately made the top at the first attempt.

"Imagine our feelings to find the tide at its full and that it was impossible to get to the hard beach sand for at least two hours. Our guide having done all he could, and having actually landed us upon the beach, although it had taken eight hours to make the five miles, now left us to our fate. As the tide receded we worked the wagon down onto the beach, but the sand was very soft and the wheels would revolve and settle down so it became necessary to jack up the wagon every few feet and pack sand under the wheels.

"It finally became so dark that we decided it unsafe to attempt going further that night, and as the wagon was below high-tide line, we removed and carried everything portable to the top of the sand barriers, and taking our headlights and the hatchet to satisfy Mrs. Hill, who remembered the stories told about bear and wildcat by our host of the night before, we walked back through the scrub and sloughs to a camp of hunters we had seen

in the afternoon. You can imagine how fatigued we were after such a day, and their coffee, ham and hardtack were, indeed, refreshing. They offered us shelter, but advised us to go back a half-mile further to the dredge "Wimbee" at work on the canal between the Halifax and Matanzas Rivers. The dredge people received us heartily and placed at our disposal a large tent belonging to their surveying party, when we built our campfire and were very comfortable. Wednesday morning the colored chef of the "Wimbee" got us a special breakfast; also furnished us with a lunch, and we started back to the beach with two of the dredge people to help carry our blankets and a quantity of gasoline, which we sorely needed by this time. We found the night tide had reached to within one foot of the wagon. I forgot to say that the writer went back to the beach after supper Tuesday with four of the dredge men, and moved the machine up the beach some twenty feet. If this had not been done, the tide would most likely have done serious damage."

Reloading their baggage once more into the Knox, they succeeded in making the hard sand beach on the first attempt, and, bidding their friends good-bye, they drove the thirty miles to Daytona in about two hours, finding a good, hard beach all the way, although several of the residents told them that the beach was liable to be hard one day and soft the next, north of the House of Refuge, and could not be depended upon for use by automobiles.

Notwithstanding the difficulties encountered between St. Augustine and Daytona, Mr. and Mrs. Hill planned to continue on south to Miami after the conclusion of the tournament at Daytona.

M. W. EHRLICH DRIVING J. I. BLAIR'S PARIS-VIENNA PANHARD.

Clyde Challenge Trophy.

One of the handsomest of the many handsome prizes offered in the Florida tournament just concluded was the silver trophy presented by the Clyde Steamship Company to be offered as first prize in the five-mile invitation race for gentlemen drivers. It is a splendid specimen of Gorham silver representing a nymph rising from the waves and holding an orchid in the uplifted left hand. It is mounted on an ebonized base bearing a silver plate suitably inscribed, as shown. The Clyde Trophy will be one of the many prizes that will attest the prowess of William K. Vanderbilt, Jr., on the Florida beach, who will prize them far above their weight in more precious metal.

SILVER TROPHY PRESENTED BY THE CLYDE STEAMSHIP COMPANY; WON BY WILLIAM K. VANDERBILT, JR.

International Cup Week Program.

The program for the Gordon-Bennett cup week in Germany has been announced as follows:

June 16—Weighing of the machines; special opera performance at Homburg, at which the Kaiser will probably be present.

June 17—The cup race.

June 18—Excursion over the course, followed by a grand banquet given by the German Automobile Club.

June 19—Various events on the race-track at Frankfort.

June 20—Concours d'elegance at Homburg.

Halifax River Motor Boat.

The fastest boat on the Halifax River in Florida is the *Uncle Sam*, which was used last week for carrying spectators from river towns to Daytona to see the record trials and races on the sea beach. The boat is owned by McCoy Brothers of Daytona and is a Florida product. She is 65 feet long, 11 feet beam and makes 14 miles an hour. The photograph of her on page 160 was taken on the Tamoka River, "the home of the alligator."

Arrangements have been made for a match race for the five-mile championship to be run between Barney Oldfield and Charles Graham of New York on a circular track in Savannah, Ga., early this month. Other of the contestants in the Ormond-Daytona races are expected to stop over on their way north to participate.

Gasoline Engines for Marine Propulsion.*—I.

Comparison Between Motor Requirements in The Automobile and The Motor Boat—Two and Four Cycle Engines—Description of Typical Installations in High Speed Launches.

BY D. H. COX.

The development of the automobile having demonstrated the possibilities of explosive gasoline engines for vehicle propulsion, their application to marine work has followed as a matter of course. While the many troubles and accidents that have been experienced by the majority of automobilists have tended to prejudice the minds of many persons against these engines, this should not really be the case. Rather should it be considered decidedly to the credit of an engine of its type that it has been able to be used with any degree of success for automobile work, the conditions of which make its operation a matter of the most careful design and manipulation.

When the governing conditions for the automobile and marine motor are contrasted, it will be seen that in each instance the most serious obstacles in the way of the successful operation of the former are, if not absent, at least minimized in the latter. The heat produced in the cylinders from the high temperatures of the exploded gases can, in the marine motor, be readily drawn off by an unlimited supply of circulating water, while in the automobile the cooling effect of the air must be relied upon. The limiting conditions of weight and space for engines and fuel are not as a rule so restrictive in a vessel as in a vehicle, thus permitting a greater fuel supply, and the use in design of much larger factors of safety with corresponding increase in freedom from breakdowns. The dust and grit, with their disastrous effects upon automobile engines, are not to be contended with. The conditions of use are more severe for the automobile, forced as it is to go up and down steep grades over rough road beds, with very variable loads and speeds.

After considering these facts it does not appear at all remarkable that the manufacture of marine gasoline engines, having been given an impulse by the automobile, should have gone on increasing in magnitude at almost an unprecedented rate. The application of this engine has been along many and widely different lines. Among the working vessels, they have been largely used by the oyster and fishing fleets along the coast as an adjunct to sail power, thus saving much time in getting to market and making the fisherman more independent of weather conditions. In almost all the fishing villages, also, where dories or surf-boats are used to run out to the nets, many boatmen now have motors that save much time and labor.

In the yachting world they have taken a firm foothold. There are gasoline house-boats, "steam yachts" with masts and dummy stacks, auxiliary schooners, yawls, sloops, and catboats, besides the ever-increasing fleet of "power boats" proper, or launches of the various types, cabin or open, cruising or racing. To see for the first time a fully sparred schooner, for example, running along at a nine-mile gait, with no sail set and no visible means of propulsion, is decidedly novel.

Gasoline marine engines are divided into two distinct types—the two-cycle and the four-cycle. In the former the piston receives an impulse once in every two strokes or each complete revolution, while in the latter the explosions occur every fourth stroke or every second revolution.

In the two-cycle type the crank space is enclosed in an air-tight case, this space as well as the cylinder being connected to the air and fuel supply. On the up stroke the piston suction draws air into the crank space through a vaporizer in which it is charged with gasoline vapor, the degree of saturation being regulated by a needle valve controlling the gasoline opening. This charge is compressed by the succeeding down stroke, and by means of a port, uncovered just before the end of this stroke, is allowed to rush up into the cylinder space, there to be again compressed to from 75 to 85 pounds by the piston during its next up stroke, and exploded just before the end of this stroke. Thus during each up stroke one charge is drawn into the crankcase and another is compressed in the cylinder and ignited, while during the succeeding down stroke the ignited charge is expanding and doing work, and the new charge after being compressed in the crankcase is transferred to the cylinder preparatory to compression and ignition, the burnt gases having escaped through an exhaust valve just before this.

In the four-cycle type the crank space is not enclosed in an air-tight case, and the operations of drawing the charge, compression, ignition, expansion, and expulsion, have to be carried on in the cylinder itself. During the first down stroke the charge is sucked in, compressed during the succeeding up stroke and ignited, expanded during the following down stroke, expelled during the next up stroke, after which the cycle repeats itself.

The matter of weight for a given horse-power varies very considerably among the different designs made in this country, some engines being more particularly adapted to racing and others to general work; some makers make engines of different weights to meet the various conditions. Foreign motors, as a rule, are lighter than our own, approaching more nearly the automobile scale of weights. Personally, I think that the reasonably heavy engine is a much healthier development than the extreme racing machine. It seems that we save enough in dispensing with boiler, stack, condenser, auxiliaries, piping, etc., to make a decent allowance to engine weight possible.

As the installation of the fuel tank and supply pipes has much to do with the safety of the vessel, the most important points to be observed will be noted briefly. Tanks are properly made of heavy copper, with riveted and soldered joints. All connections for fittings should have flanges on inside and outside to prevent tearing the copper. A number of baffle plates must be fitted to control the motion of the oil when the vessel is in rough water.

The tank is generally located in a peak compartment, but occasionally near the center of the vessel. In either case, the space in which the tank is placed should be carefully ceiled, and the tank made an accurate fit by peining the sheets to shape in place before assembling them; this prevents any bulging in and out of tank sides, which is bound to make leaky joints eventually.

The tank compartment generally has a water-tight bulkhead on each side of it, and in many instances is flooded by having a number of holes through the planking in the region of the water-line. An alternative to flooding the tank compartment is to work a flat across underneath the tank, this and the sides of the compartment being sheathed with copper to a considerable height, thus forming a pan, which is given an overboard drain by pipes carried down and out through the side. The compartment may also be flooded if desired. In both methods the prime object is to provide an escape overboard for the gasoline in case of leakage or accident. As in any event the tank bottom should not be lower in the vessel than the vaporizer in order to secure a flow even with a small quantity of oil in the tanks, possibly the method in which a flat is worked under the tank is the more logical, particularly as it should result in absolutely freeing the bilge from any danger of gasoline vapor or fluid.

The supply pipe from tank to vaporizer should have a cut-off valve just outside tank and before entering vaporizer. The pipe should run directly down from the tank out through the planking close in to the keel and then direct to the location of the vaporizer, where it will re-enter the hull. Naturally, extreme care should be taken in making up all

* From a paper read before the Society of Naval Architects and Marine Engineers in New York.

joints in this piping, and a careful test should be made of the whole system when completed. The tank space, as well as engine-room, should be well ventilated. As gasoline vapor is heavy, any system by which the air in the bottom of the compartments is sucked out would be the most defective. This would apply particularly to installations on vessels of some size with enclosed engine-rooms. If the precautions suggested are taken, the danger from explosion of gasoline should be very small, and has been found so in actual practice, nearly all accidents being directly attributable to carelessness in installation.

The charge is, in most instances, ignited by an electric spark, as before stated, this spark being generally produced by a break in a low potential circuit of primary cells or a magneto machine, thus causing an induced spark of high tension in the cylinder space by means of a regular jump spark arrangement with Ruhmkorff coil, one terminal being grounded to the engine casting and the other connected to a well-insulated electrode projecting into the cylinder space.

In some installations a dry battery is used for the initial sparking, and when the engine is once started the battery is cut out and a magneto driven off the engine thrown in, thus reducing the drain on the batteries. The electric wires must not be run low in the bilge, where they would be affected by dampness or water, or where a spark from a bad connection might ignite escaped gasoline vapor.

The batteries, terminals, magneto, and all electric connections must be well protected from dampness and spray to ensure proper working. All wire connections to terminals, as far as possible, should be soldered, and binding screws should have locknuts to prevent them from jarring loose through vibration.

Some launch owners prefer to use a storage battery instead of the customary dry cells, and one of the 1,000-mile automobile batteries will last the greater part of a season for this purpose with ordinary use. By having a spare battery on hand of this description, there seems less chance of trouble than with the primary cells, which have a way of running down unexpectedly. In any case there should be a reserve to fall back on in the event of a good spark not being produced.

In practically all the gasoline engines now on the market, with one notable exception, an initial charge must be drawn into the cylinders by cranking the engine over by hand before an explosion will be

D. LAMBERJACK IN 60-HP. CLEMENT.

produced and rotation commenced, and when the engine is so started it runs continuously in one direction, reversal being impossible. Accordingly, to make it possible to stop and reverse the propeller, either the connection between the engine and the wheel must be by gearing, or a feathering blade must be used in which the pitch can be altered at will by the engineer. The first method is the most frequently used perhaps, and by many is considered the more reliable, several very substantial and positive friction gear clutches being on the market so arranged that by manipulating a lever the tail shaft and crankshaft may either rotate as one or in opposite directions, or the tail shaft may remain idle while the engine turns over.

Several very simple and effective feathering wheels are on the market also and give excellent results, the pitch of the blades being altered at will from a maximum go-ahead pitch, through zero to a maximum backing pitch with the same direction of rotation of the shaft. The shafting in such cases is hollow, and a rod within it controls levers on the hub which revolve the individual blades on their axes. The fact that the engine must be run continuously during the changing from going ahead to reversal makes it evident that a method of governing should be provided to prevent racing during the change in load.

This continuous running of the engine during short stops, when making landings, going alongside other boats, and, in general, when quick and positive starting is required is, as a rule, quite objectionable, owing to the noise and vibration usually caused under these conditions.

The speed of the engine is altered by changing the timing of the spark as already stated, and also by throttling the gas supply. In all good designs both means of speed control are provided, and the throttle in addition is actuated automatically by a governor driven off the engine to prevent racing under release from load when stopping or running in a seaway. By a combination of these methods, and by the use of warm air, a large range of speeds and a considerable variation in the consumption of gasoline per horsepower hour is possible. Under the best ordinary conditions, when the gasoline vapor is in the proper proportion, the consumption does not vary greatly from one pint per horsepower hour, and this is the figure generally used in calculating tank capacities.

The heat produced by the high temperature of the products of combustion is drawn off by circulating water from the sea, driven by a pump from the engine, the cylinders being well-jacketed for this purpose. In some cases after passing through the jackets this water is discharged directly overboard, and in others it enters the exhaust pipes and passes out with the consumed gases. The latter method is preferable, lowering as it does the temperature of the exhaust line and reducing the back pressure, and having also the effect of securing a less noisy exhaust.

Some form of muffler tank or expansion chamber is generally fitted in the exhaust line to deaden the sound of exhaust; diaphragms of different designs are sometimes introduced in these tanks to assist in the muffling process, but they have the effect also of raising the back pressure. Discharging the gases below the waterline, a device sometimes adopted for deadening the noise, and keeping the discharge where it will not be noticed, also increases the back pressure as do the numerous unnecessary bends in the exhaust line that may often be found when the installation has been carelessly made.

JOSEPH TRACY IN REMODELED GORDON BENNETT, PEERLESS RACER.

An automobile was on our streets Monday. Say, if you will, that Barren Hill is not up to date.—*Versailles* (O.) *Policy.*

Hints for Buyers of Gasoline Cars.—II.

Comparison of Air and Water Cooled Machines—Suggestions About Tanks and Tool Cases—Discussion of Clutches.

By RENE M. PETARD.

Cooling Systems.

In dealing with cooling systems it will be necessary to consider two entirely different methods of obtaining the same result. These are cooling by air and cooling by water. Without entering into technical considerations, it might be well to give a general idea of the good and bad points of both systems. The object of both systems is to carry away from the cylinder and piston the extra heat of the explosion not transformed into mechanical energy. This surplus heat would cause: excessive dilatation of the piston and "seizing" of the same, decomposition and combustion of the lubricating oils, self-ignition of the charge, and still worse results after a prolonged running of the engine. It has been found in experimental tests, and sometimes and more unfortunately on the road, that in badly cooled engines the head of the piston was running red hot, thus causing endless troubles and stopping of the engine. After pointing out thus the importance of the cooling, I will briefly compare the water with the air cooling.

In the water-cooled engines water contained in a jacket surrounding the heated parts of the cylinder is caused to circulate and carry such heat to a radiator, conveniently situated, where it is taken away by the surrounding air. In the air-cooled motor it is the air, directly in contact with the cylinder, which takes away the heat. It will be easily understood that the larger the surface exposed to the air the greater the quantity of heat carried away, and the more satisfactory the working of the cylinder will be, providing, however, that the temperature of the cylinder walls does not come below 120 to 220 degrees, the temperatures between these two having been found the most satisfactory in ordinary use.

Knowing that we want as large a cooling surface as possible, we find that, with a water-cooled motor, we can increase the surface of the radiator to almost any extent, while with an air-cooled motor, we are necessarily limited to the surface of the cylinder and a few ribs or similar devices intended to increase this surface. It would thus seem at first glance that the water-cooled engine has all advantages over the air-cooled.

Devices have been found, however, which allow of a sufficient amount of air to be admitted in contact with a sufficiently large cylinder surface to obtain satisfactory results. Air-cooled motors, indeed, have certain advantages over water-cooled in that they allow reduction in weight, are of greater simplicity and are not affected by freezing weather. Personally, I believe that for light cars, at least, air-cooling devices, such as are on the market at present are likely to give complete satisfaction to the average buyer.

When about to get an air-cooled machine the purchaser should be careful to see that in his machine the air has as free an access to the cylinder as is possible without impairing too much the good looks of the car, also that satisfactory means of protecting the cylinder from mud and dirt splashed by the wheels are provided.

Buyers should be very careful in selecting an air-cooled machine. Although most of them have proved satisfactory there is a tendency among manufacturers to solve the very difficult problems to be encountered in designing correctly an air-cooled motor, by sacrificing the disposition and size of the valves to greater ease in manufacturing, and to better results in cooling, thus producing an engine which, although satisfactory as far as cooling goes, will be imperfect in efficiency and smooth working. As a whole, it appears that there is room for large improvements in the design and manutacture of such engines, and that when these improvements will have been made the air-cooled motor will no doubt take the place of the water-cooled, in smaller powers at least.

Now comes the subject of water cooling. The buyer of an American car is offered two systems of water cooling: one by pump-forced circulation—the system more generally adopted—and the other employing natural circulation. This latter, the thermo-syphon system, is simpler, but more difficult to design in order to get satisfactory results.

In the pump system a rotary pump of the centrifugal type is generally used. Such pumps are usually satisfactorily designed, and there is not much to say concerning them in this article. I will, however, mention the fact that the water jacket and water piping should be of ample dimensions. This is especially so if the water in his district is hard and liable to deposit salts by ebullition. In some instances where the water is very "hard" he should not select the cellular or honeycomb radiator, as this would speedily become clogged and its efficiency destroyed. The same can be said of anti-freezing solutions, and I believe that most of these, chiefly the ones containing large proportions of solid chemicals, are most injurious in narrow waterways, and should be avoided no matter how satisfactory they may be in any other respect.

Among the protective means against possible destruction or deterioration of the engine by freezing of the water jacket, the one which I think is the most satisfactory and perfect on the market is the Rossel device, used in France on the cars of this name. This device is illustrated in Fig. 1. A circular disc of fiber f is held in an opening in the water jacket J of each cylinder by means of a flanged nut N. If the water contained between J and the cylinder wall C happened to freeze, the pressure caused by the increase in volume would soon break the disc f, shearing it off around the flange N, and afterward extending outside in a long cylindrical lump of ice, thus preserving the rest of the machine. When one is to start again this lump of ice is broken, a new fiber disc inserted and the heat of the motor soon thaws out the ice contained in the rest of the machine.

Devices of this kind should be used extensively, as they are simple, effective, and cheaper than any kind of mixture, and do not impair in any way the cooling of the motor, as many mixtures do.

Tanks and Carrying Spaces.

A question often neglected by the manufacturers is the convenience in the disposition of the tanks and batteries or cells, and in the provision of carrying spaces for tools, storm coats and robes, and incidentally personal packages.

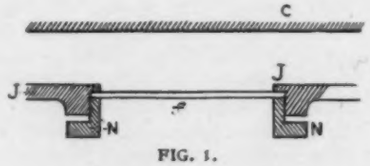


FIG. 1.

The buyer of a car will only appreciate a convenient disposition of these parts of the car after a short use of his machine. When purchasing he does not think that this consideration is of any importance. When at his first breakdown, however, he may have to disconnect all his batteries and unscrew the piping of a watertank to reach a bolt which had gotten loose and caused his gear box to rattle. Then he will certainly understand that "any old way, on top of the rest" is not the proper situation for a tank.

There are several favorable positions for the tanks which have proved satisfactory and satisfy the requirements of any type of machines.

For cars with motor in front and transmission under the footboard, the most convenient position for the tanks seems to be under the front seat, when the fuel is fed to the float chamber of the carbureter by gravity, and under the frame in the rear when provision is made for feed under pressure.

If the tanks are situated under the front seats, both openings for water and fuel should be under the driver's own seat, as he-

generally gets up to supervise the filling and would otherwise have to disturb the other occupants of the car.

If the tanks are in the rear of the chassis and the car is of double chain drive, there is nothing particular to say, but if the car is of single chain or flexible shaft drive, provision should be made by strong buffers in the springs to avoid hitting the tanks by the machinery on heavy roads or when the car is heavily loaded.

In some foreign cars the tanks are hung on the front side of the dashboard, close to the engine. This position is very satisfactory on light cars, but does not allow of large tank capacity. It has been found objectionable, especially on air-cooled cars, to place the tanks too close to the motor, as the heat which the cylinder radiates might cause useless evaporation of the water or of the gasoline.

Large tanks should always be supplied and it can be said that to be really serviceable and to insure its owner against premature or unexpected shortage, the fuel and water supply should be sufficient for about one hundred and fifty miles' running.

Two sets of cells or batteries should always be supplied, and should be all used so that the mere turning of a switch puts either in operation. A convenient place for the batteries on large cars is the right side footstep which is seldom used on account of the obstruction of the levers and steering wheel.

Before leaving this subject, I will call the reader's attention to two most convenient departures. The first is the disposition of the tanks under the hood in the new Oldsmobile runabout, as they are there in a most handy position and besides add to the good looks of the car. This example might be followed by other manufacturers of cars with horizontal motors, either in the middle or the rear of the car, as it is a most elegant and practical solution of the problem. The other is the tool box which was shown at Madison Square on the Locomobile chassis. It consisted of a nicely finished box containing several trays with compartments made to the shape of the tools or repair parts which they were to contain, thus allowing the driver to see at a glance if his equipment of tools and repair parts was complete and also allowing him to find readily anything he might require.

Generalities.

Before starting on the subject of transmission and general construction of the car, and without going into details concerning the motor construction, since we agreed that this was out of the program of the present article, I will make a few remarks on details of construction which could not enter under any special headings and are however, of a certain importance.

First of all, the buyer should see that every one of the parts of his car is perfectly accessible. Nothing too strong could be said to urge the manufacturers to avoid the "jamming" together of all the machinery in an inextricable mess or the scattering of the parts. Both evils are still to be found in an altogether too great

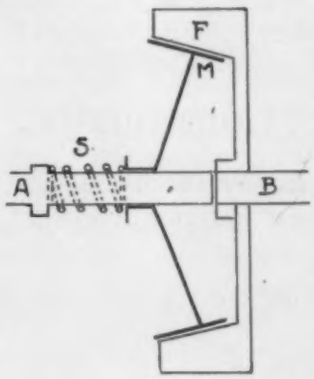


FIG. 2.

extent, and are both as annoying, one as the other, in case of a breakdown of any kind. This scattering of the parts which can only be avoided by very careful and scientific design in the case of the double-opposed horizontal motor, is to my opinion, the greatest objection to this otherwise very satisfactory type of motor.

The part of the motor in which accessibility will be most appreciated is the cylinder-head and valve-chamber. The ignition apparatus, spark plug or make-and-break, the valves and their accessories should be easily gotten at, and of easy removal and replacement. Two nuts at the most are all that is necessary to hold an inlet valve and dome in place. There are many devices now on the market allowing to inspect and replace entirely one or two inlet valves in the case of double cylinders by the removal of one single nut.

The compression cocks should also be easily gotten at. In the Rossel car, instead of a plain handle like the one to be found on most motors, the tap is actuated through a long light bar, about two and a half inches long, which, when the tap is closed, is in an oblique downward position so that the vibration of the motor simply tends to force it further down, which is not possible on account of a stop.

Buyers will also be wise in avoiding cars with too many levers and connections between the different parts of the mechanism, such as throttle, contact breaker, etc. In the actual stage of progress of the industry, means have been found to operate any part of the cars in about as simple a way as it is possible.

Transmission.

First—*Clutch.*—In the cars fitted with a planetary system of transmission we do not find such an organ, and since this transmission is almost to be considered as the standard of construction for American runabouts and light, low-priced cars, what I will say applies mostly to the more expensive types of touring cars.

Two principal kinds of clutches are to be found on the market: the friction clutch, and the so-called "drum clutch" based on the torsion of a spring. We purposely leave out the magnetic and electric clutches to be found in the "mixed cars," combining production of power by thermic motor and drive by dynamo.

Of friction clutches the type most used is the conical clutch. Such a clutch is shown in Fig. 2. In this system a male member *M* sliding on a shaft *A* but revolving with it, is pushed under the action of a spring *S* into contact with a corresponding female part *F*, generally cut in the fly-wheel, the surface of contact of these two parts being such that the friction caused by the slipping of the two surfaces one on the other would require a greater amount of power than is necessary to drive the car. This clutch, like the other types of friction clutches, presents the advantage of giving smooth running, since a certain amount of slip always takes place when a sudden jar or shock is to be transmitted between the motor and the change speed apparatus, thus saving the machinery.

A device now used on a certain number of cars, both abroad and here, allows such slip to take place, especially when starting the car from a standstill. With the usual plain leather-faced clutch the shock given by the motor to the machinery when starting is generally very sudden and sometimes very destructive of the gearing, especially in the case of single cylinder engines. To avoid this, many makers have

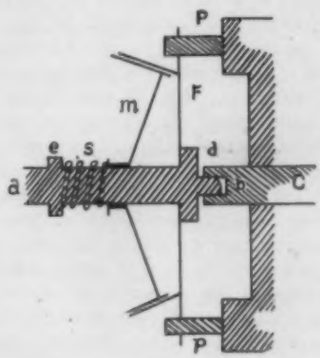


FIG. 3.

found it advisable to place springs under the leather facing of the male part of the clutch, thus allowing a more progressive and smoother start, saving both machinery and tires.

It will be readily seen by inspecting the sketch that the action of the springs tends to separate the two shafts *A* and *B*. This end thrust is generally taken up by ball bearings, although in many cases, for the past two years, devices have been brought out which take up this end thrust in

themselves, thus saving both the crankshaft and the primary shaft of the speed gear.

One of the simplest of these devices is shown in Fig. 3. The clutch is mounted upon a short shaft *A* revolving freely in a bearing *b* cut in the crankshaft *C* at its end. The other end *a* of this shaft driving the change speed shaft through an universal joint or any other type of connection. The female member *f* is idle on the shaft *A*, but rests against a collar *d* turned on it, and revolves with the crankshaft through pins *P* screwed into the flywheel on its periphery and on which *f* is free to slide. When the spring *S* will be put into action by the operating pedal, the male member *m* will come in contact with *f*, pushing the same against *d* and leaving the crankshaft free from all strains.

American Automobile Construction.

A Discussion of Conditions as Disclosed by the 1904 Exhibition and Comparison with the Best Practice Abroad.

BY EDWARD T. BIRDSALL, M.E.

A bird's-eye view of the recent exhibition at the Madison Square Garden discloses a marked advance in the direction of the so-called French type in which the multi-cylinder motor is placed in front under a bonnet and the power transmitted by sliding gears to a side chain or bevel gear driven rear axle. So great is this tendency to imitate the prevailing model that even one electric places the motor under a bonnet and uses a bevel gear drive, a design that will catch the popular fancy, but that has apparently nothing else to recommend it.

Many others, gasoline, electric and steam, have the outward form of the French type, but the bonnets will be found upon investigation to contain tools, tanks, batteries or boilers, and in some cases are empty lockers.

It may thus be safely assumed that as far as mere outward form is concerned the French type satisfies the eye and that it is necessary to have something in front of the dash to take the place of the horse. The body design and workmanship of the older and more progressive manufacturers show great progress, the bonnets especially, although in many cases a copy of the 1903 Mercedes, are rational and neat. Many of the others, however, are really ludicrous, reminding one of tea caddies or bird cages. With so many good forms at hand as models it is far better to slavishly copy than to expose by such evidence a lack of knowledge of the necessity of artistic fitness in a design. In general body work a few builders now equal the best foreign productions and a better appreciation of the closed or semi-closed type of body for general use is being shown. This growing use of the automobile for shopping, the theater, calling and other strictly utilitarian purposes indicates beyond question the stability and permanence of the industry.

As to frames, the pressed steel is now used by several makers, as it is now possible to get such frames in this country. This construction especially appeals to the American engineer as being a good solution of the problem and one that lends itself not only to low priced but good results.

Wood wheels of the artillery type, with double tube tires have entirely superseded the wire wheel and single tube tire except on very low priced or experimental machines.

Coming now to the mechanism proper, much more difference is seen. The older and more experienced manufacturers are dividing into two groups; those using a horizontal engine of the double opposed cylinder type, and those using the French type. In the heavier classes the latter seems to be gaining ground, but in the light classes the former. As the French type is admittedly the more expensive one to build, and as the double opposed cylinder engine is quite free from vibration and gives quite satisfactory results, it would seem that this type will survive as the type for runabouts and low priced machines.

In spite of the difficulty of obtaining in this country the special steels, fine castings in iron and steel, and other materials required in the construction of high-class machines, the 1904 American product shows wonderful progress over that of the year previous. Some builders overcame this difficulty in the past by importing their pressed steel frames, cylinder castings and many other parts from abroad

Few of the machines shown can yet approach the best foreign machines in excellence of design, finish and perfection of detail. In most works the self-sufficient inventor is evidently still occupying the chair of the mechanical engineer. Not that the inventor is not appreciated or necessary, but his ambition to use his own devices, whether good or bad, to the exclusion of all others, wastes much time and money and delays real progress.

The success of two makes of air-cooled machines has stimulated work in this direction and several new machines were shown. A hot summer will prove more as to the correctness of their design than tons of catalogues and days of argument.

A notable feature of the show was the persistence with which some of the manufacturers adhere to types and devices that the buying public evidently does not approve of and that other manufacturers have almost unanimously abandoned. However, as France, Germany and England also have similar examples, it would seem that they are necessary and fill a peculiar niche in the automobile world.

The war of the mechanically operated *vs.* the automatic valve; jumps *vs* wipe spark and many other questions of detail design, do not seem to be as near solution here as they are abroad. The influence of well-known makes on many points of design is still seen, and it will probably continue to take the place of individual originality and judgment for some time.

The steamer has lost much ground since last year, as the high-grade gasoline machines are now equally quiet and free from vibration. The electric vehicle is well settled in its special fields, and for town carriages and commercial vehicles is doing good work. While the motors and controllers are now standardized and very reliable, yet the same cannot be said of the battery, the perfect one not yet having been found. The principal feature of the electric at the show was the suitability of the bodies to the work to be done.

President Roosevelt on Good Roads.

The National Committee of the St. Louis Good Roads Congress met President Roosevelt at the White House January 26 and was pleasantly received by the Chief Executive, who spoke as follows:—

"Mr Chairman, I wish to greet you particularly, and I am sure I need not say how entirely I sympathize with the movement that you are championing for better means of communication. The road is the symbol of civilization. Take our great province of Alaska—I doubt if there is anything more needed for the development of Alaska on permanent lines than the building up of a proper system of roads, and, where it is impossible to make wagon roads, trails in Alaska. Throughout our country our citizens will have to turn their energies into providing means of intercourse—that is, the roads—between community and community, because we are a civilized people, and we cannot afford to have barbaric methods of communication."

The Senate and House committees on agriculture gave hearings to the committee, a number of members declaring themselves to be in favor of the several bills before Congress for a specific appropriation for road construction, conditional upon like appropriations by the various commonwealths accepting the allotments.

If a leak develops in any of the water connections of a gasoline car a good temporary repair can be effected by smearing the defective part with white lead and wrapping it with several layers of rubber tape or cloth cut into strips, with additional applications of white lead after each layer. The tape or cloth should be wrapped tightly and plenty of lead should be used, extending beyond the leak in either direction for some distance. The bandage may be held in place by wire.

Chicago Auto Show Opens Feb. 6.

Special Correspondence.

CHICAGO, Feb. 1.—The fourth annual Chicago Automobile show will open for a full week at the Coliseum on Saturday, February 6, with the exhibits of seventy active members of the National Association of Automobile Manufacturers and of almost the same number of associate members in that organization. With more ground level space in the Coliseum than was available in Madison Square Garden, the lack of more than one gallery and the absence of a basement space to assign in the Coliseum have made a strong pressure upon the available exhibit space for the Chicago show. The Chicago show, however, will not have to house a foreign exhibit and taking the characteristic retail features in which the Chicago exhibition contrasts with the makers' exhibition in New York, and the further interest that attaches to the annual convention and elections of the American Automobile Association, the week between February 6 and February 13 is promising enough to exhibitor and visitor.

As a field for the exhibitor, Chicago is promising more this year than ever before. Men familiar with the local field and market are looking for a season in which 1,200 to 1,500 machines will be sold, in contrast with the average of 700 to 800 in years past

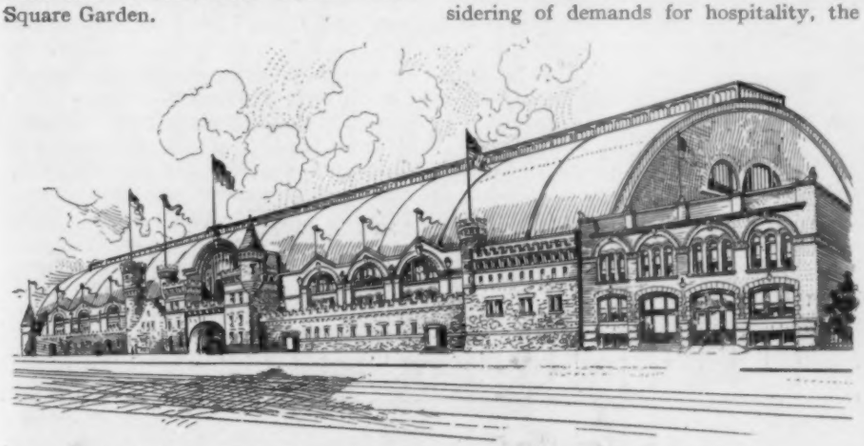
"Compared with the New York market this may seem small enough," said Manager J. H McDuffy, of the Autocar company in Chicago, "but it will be close to doubling the business of last year, for instance. While there will not be more than five or six machines sold this year at prices above $10,000, as compared with the possible 150 machines to be sold above that price in New York, the Chicago show will be a distinct stimulus to the business of 1904. From the point of view of exhibitor and individual, the Chicago show will be satisfactory for the reason that four times as many machines will be sold from the Coliseum exhibits to consumers direct than were sold to individuals from Madison Square Garden.

"At the Chicago show we have an American exhibition almost exclusively. Probably there will not be a foreign machine in the exhibit. This is because of the difference in the two markets of New York and Chicago. Most of the machines in Chicago range from $5,000 down, while the range in prices for New York is $20,000 and down. Thus the New York show in comparison is international because of its high-priced machines of foreign build, while the domestic machines at Chicago make the exhibit strictly American."

For the Chicago show, many of the exhibitors who were in the Madison Square lists will be represented. For them the show will be largely a repetition of their showing at New York, though of necessity it will devolve upon the exhibitors to interest the individual rather than the dealer. The Coliseum, with room for 10,000 spectators, using its annex and a first balcony for exhibits, offers room enough for those who may have the purchase of automobiles in mind. Following the long and enforced season of closed theaters in Chicago, the exhibition, too, should come at a particularly opportune time to awaken interest.

From February 8 to February 13 the convention of the American Automobile Association is set at the Coliseum. The election of its officers will be held and the candidates to be chosen are Harlan W. Whipple for president, John Farson for first vice-president, Judge W. H. Hotchkiss, second vice-president; Milbank Johnson, third vice-president; George Torrington, treasurer, and C. H. Gillette, secretary.

The Chicago Automobile Club, with its more than 200 members, will keep open house through the week. It has associate members all over the country and these are to be cared for especially while individually the members of the club will seek to make visitors from outside feel at home. As an occasion for the considering of demands for hospitality, the club held a smoker on Thursday night, at which a vaudeville entertainment was an amusement feature. A banquet may be given one evening in convention week.



COLISEUM AND ANNEX WHERE CHICAGO SHOW OPENS SATURDAY.

REDUCTION FROM SHOW POSTER.

As an exhibition place for the automobile manufacturer, the last year has done a good deal for Chicago. The time was when even the typical resident of Chicago submitted to the statement that his home city was built in a quagmire having no bottom, and that out of its dead level of streets and avenues and country lanes there was nothing scenic or picturesque. But this was when the Chicago man took his airings in a carriage or in one of the distinctive "top buggies" which Chicago affects. Last summer the president of the Cook County Board of Commissioners brought to the attention of the Chicago man that his city had fewer acres of park in proportion to the population than had almost any other city in the country. To prepare for the Chicago of the future, he brought up his scheme for the purchase of territory outside the extreme limits of the city, embracing woods and hills and marshland and streams, these plots to be connected by existing roadways that should be improved, and the whole plan of drives and parks to take in vistas such as the average citizen of Chicago did not know existed. These parks, drives, roadways and stretches of lake shore were to combine into an outer park rim of about 100 miles length.

Taking in this route by automobile during the last summer and autumn, many residents of Chicago not only have been awakened to the beauties of their surroundings, but have been impressed as never before with the necessity of the automobile as a pleasure vehicle when this park scheme shall be complete.

Correspondence

Poppet Valve Two-Cycle Engine.

Editor THE AUTOMOBILE:

Thinking that an account of our experience in the development of a two-cycle engine charged through a poppet valve, may be of interest to gas-engine builders, I give it here. These are ideas we never saw in print. Whether they are correct or not, the engine so designed is a success and a positive progress in two-cycle engines.

About two years ago Mr. Albert Buchner and myself conceived the idea that a two-cycle engine charged through a mechanically operated poppet valve ought to become more surely charged each time than by the ordinary method of the piston cutting past a port. We argued in this way:

A poppet valve opened instantly would let the charge into the cylinder comparatively more in a body and more quickly than by the ordinary method. If a dam is broken from in front of a body of water, letting it flow down in a mass, it will carry stones and other obstacles before it that it would not move if allowed to flow out more slowly. Analogous: The charge thrown into the cylinder through the poppet valve will more surely exhaust the burnt gases. The poppet valve is opened fully almost instantly. The port in the regular two-cycle engine is opened quickly, no doubt, but it is first opened one-millionth of an inch before it is opened one-thousandth or one-hundredth of one inch. This can not but admit the charge gradually. The ear is not a delicate enough instrument to detect the manner of the admission of the charge. Also, the more rapidly the engine is running the more surely this time element in the admission of the charge has its effect. With an engine running ten revolutions a second and the port opening during one-eighth of the revolution we have one-eightieth part of a second for the port to be opened until it is wide open. The gas begins to enter the instant the port begins to open, and if a full charge is taken it is probably entering during all the time the port is open or one-fortieth of a second. When the crankcase pressure is highest it begins to enter through a very narrow slit, consequently sort of blows in, giving it a chance to mix with the products of combustion instead of driving them before it.

We inferred that this might be the cause of the uncertainty in starting that the two-cycle engine has acquired the reputation of having. We designed an engine with a valve through the piston and a cam rotating with the crankshaft devised to open this valve as nearly instantly as possible. This cam was suitably related to centrifugal weights to cause it to open the valve more or less according to the load of the engine. I will contribute a description of this engine with drawings to a future number of THE AUTOMOBILE and say what sort of operation we secured from it. I will say now that of the number we have built and had operating under all sorts of conditions, there has never been a failure of any of them to start instantly when supplied with any approximation to the feed and ignition that would be considered necessary to operate any gas engine, whether two or four cycle. It has manifested sufficient merit that we have been enabled to make very nice contracts with one of the largest stationary gas engine manufacturers and one of the largest automobile maufacturers in the West. This seems to be a sort of new departure among the innumerable schemes for two-cycle engines. We found nothing in the patent office to interfere with our claims.

Chicago. E. P. MCCLURE.

Deficiency in Catalogue Data.

Editor THE AUTOMOBILE:

The excellent letter from Mr. Few in your issue of the 2d inst., calls attention to defects in the catalogues of automobile makers which I have often noticed. As Mr. Few says, a business-like purchaser of a machine involving such important variations of construction and costing so much money, will naturally wish to bring together comparative statements of details as to the various machines and thoroughly digest them before buying. As an intending purchaser, I have drawn up a tabulated form containing what strikes me as the most essential points for a preliminary comparison, and it may perhaps interest some of your readers to see this table of mine filled up as far as it has gone. Mr. Few's experience is borne out by the fact that scarcely any of the catalogues were full enough to enable me to fill out this table without special letters of inquiry.

I believe that if some of your more experienced readers would make suggestions and criticisms on this tabular form, so as to make it to be made nearly perfect, as a sort of bird's-eye view of the leading points of the different makes, it would save a vast amount of time, trouble and indecision to your future readers in narrowing down their inquiries to such machines only as fill their special requirements.

VENTILATOR.

The tabulated form proposed by the writer is as follows:

FORM FOR TABLE OF DATA TO BE FILLED FROM CATALOGUE INFORMATION.

Name of Car	H. P.	Price	Weight	No. and Position of Cylinders	Wheel Base	Tread	Transmission	Drive	Ignition	Speeds	No. and Kind of Brakes	Diameter of Wheels	Size of Tires	Gals. Gasoline carried	Enough for Miles	Gals. Water carried	Location of Engine	Remarks

The table sent by "Ventilator" contains data pertaining to twenty different makes of cars, most of them belonging to the runabout and medium-weight classes and only about half of them being well-known and popular makes. We omit the table as sent, believing that it is not fully representative of the best publicity methods of the more careful builders and that the author was unable to fill some of the vacant spaces because he may have had only advance catalogues or folders in some cases. Undoubtedly, however, there is an annoying deficiency in data in a great many catalogues, and the public would gladly forego the pleasure of reading "glittering generalities" and welcome fuller information regarding features of construction and reasons for their adoption.

Racing Classification Needed.

Editor THE AUTOMOBILE:

The recent races at Ormond Beach accentuate the necessity of at once changing the racing classification of machines from the present system to one based on some intelligent and practical foundation. To race machines of one hundred horsepower and weighing twenty-two hundred pounds against others of fifty-horsepower and fourteen hundred pounds weight is about as brainy a proceeding as pitting a champion pugilist against a consumptive Dowieite or the Deutschland against a tramp freighter and expecting the weaker to win.

The races at Ormond have demonstrated the axiomatic fact that machines having one hundred horsepower and over will go faster than ones having less, and that, of the former the one having the best design, material and workmanship will last longer than one of inferior construction. A year or two hence we will look back on the races of today and wonder how we could have been so stupid. Imagine the howl that would be raised if it was suggested that the *Reliance* should sail against the fastest forty-footer without time allowance for the America's Cup or other similar trophy! Yet this is just what we are now doing in automobile racing.

In France they have for several years classed the machines by weight and for a time this method gave excellent results, but this has developed undesirable qualities, and the suggesion is now made to classify them by cylinder volume, or, more correctly, piston displacement. This classification has been used in motorcycle contests for the past year in France with apparently satisfactory results and in addition

has resulted in a tendency toward the standardization of the sizes of the motors.

Owners of racing cars are fast waking up to the fact that it is useless to spend time and money trying to make a boy do a man's work and the race entries will soon be confined to big cars of unlimited power unless a proper classification is adopted before next season.

In adopting the limits of the classes many factors should be considered, not the least of which is the prevailing sizes of machines now on the market, or, in other words, vested interests should to a certain extent influence the decision. For example, I suggest that in view of the great number of machines now being made and used that have the equivalent of four 4-inch by 5-inch cylinders that one class be called the "255 class." This would mean that machines whose total piston displacement did not exceed 255 cubic inches would be in this class.

Speed of engine, actual brake horsepower, or other details should not be considered. The one possible exception to this is the item of weight for which a minimum figure could be set for each class in order to discourage the production of unsafe or freak machines.

The racing authorities should also have the power to prevent the running of any machine that in their opinion is obviously unsafe.

If a rational and workable classification is adopted there will, in a short time, be no necessity for time allowances or handicapping, as all builders will build to the class limits.

E. T. BIRDSALL.

New York.

Flash Point of Engine Oil.

Editor THE AUTOMOBILE:

Please let me know how to apply the fire test for the best grade of gas engine oil?

F. J. R.

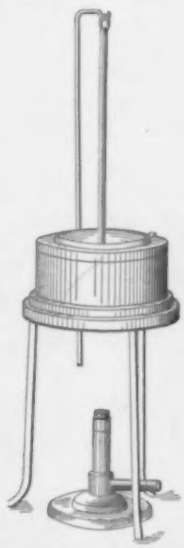
Wabash, Ind.

In the selection of a lubricant for explosion engines great stress is often laid on the fire test of the oil, although the heat generated in the cylinder of a high-speed motor working with high compression is far in excess of the burning point of commercial gas engine cylinder oil. It is sometimes desirable to verify the fire test given by a manufacturer, and it may be done by any one interested, with the aid of a simple apparatus. The oil to be tested is placed in a heavy steel or brass cup under which is an alcohol or Bunsen gas burner, a thermometer with a range of not less than 800 degrees being suspended in such a manner that the bulb is immersed in the oil.

If the approximate fire test is known, a lighted taper is passed over the vapor which arises from the surface of the oil when the thermometer registers within about 50° of this approximate figure, when, if the fumes ignite with a momentary flash, the reading of the thermometer at that exact moment will give the flash point.

If the oil is subjected to a still higher temperature, a sufficient amount of vapor will be given off to support a small flame when a second reading of the thermometer will indicate the fire test. At approximately 50° Fahrenheit above the flash point the oil will burn.

The apparatus generally used is made for the purpose and consists of a burner, using alcohol or gas, a tripod supporting a heavy metal cup and a thermometer which will register up to 800 degrees. The



OIL TESTING APPARATUS.

cup is preferably about four inches in diameter by 1 3-4 inches deep and 1-2 to 21-32 inch thick, it being desirable to provide a large bulk of metal in order that the heat may be retained at a steady temperature while the experiments are being conducted.

EVERYONE SATISFIED WITH RESULTS OF PHILADELPHIA SHOW.

Special Correspondence.

PHILADELPHIA, Feb. 1.—Despite a week of exceptionally bad weather, the local automobile show, which came to a brilliant conclusion last Saturday night, was the most successful of the three that have been held in the Quaker City; successful not only from the viewpoint of the promoters, but from that of the exhibitors—such seems to be the unanimous verdict, gathered by a poll of all concerned.

Rain and snow seemed powerless to keep down the attendance or to deaden the interest of the many visitors who came to see the latest and best in automobiles, with a view of purchasing. The bad weather actually served a good purpose, for it enabled those in charge of the demonstration machines outside the Armory to exhibit the virtues of their machines under difficulties such as few of the prospective purchasers will be likely to encounter.

The exhibitors, as a rule, had no complaints to make. Despite the low temperature outside, the Armory building was at all times pleasantly warm. If anything went wrong, there was somebody on hand to instantly set things right. Lighting facilities, telephones, carpenters' and upholsterers' services were to be had promptly. Such little things aid to success; and when the ultimate object of such an affair—business—is in evidence, exhibitors feel constrained to go out of their way to give the managers a verbal pat on the back. And the majority of them did so.

Actual sales were numerous, especially toward the end of the week, when, having thoroughly canvassed the show, purchasers made their decisions and gave their orders. Saturday was the best day of the week in this respect. It is interesting to note that, everything being equal, the buyer generally chooses a machine built in the factory nearest his home. Indeed, some purchasers give undue weight to the advantage of having the factory convenient. With the majority of the better known machines represented by local agencies, equipped with facilities for quickly making almost all necessary repairs, the advantage of such proximity is not overbalancing.

Some of the exhibitors refused to take orders for early delivery, the factory output having been sold ahead for several months. Motorcycle sales were also noted, all the half-dozen exhibitors of these machines reporting several sales. A number of local agencies were also placed during the week.

The attendance throughout was excellent—the best, in fact, since these exhibitions were inaugurated three years ago, notwithstanding a new rule of the local papers to cut out all press notices and keep all matter concerning the show down to a strictly news basis. Saturday's attendance was a record breaker and brought the question of a larger hall for next year seriously to the fore. Had double the space been at the management's disposal it could have been disposed of. Many of the exhibitors, being unable to secure the locations and shape of space wanted, took as little space as they possibly could. Some concerns were unwilling to take undesirable spaces, and contented themselves with individual shows at their downtown quarters. The most pretentious of these was the exhibition of the Quaker City Automobile Company at its new garage at 138 to 146 North Broad Street. Here the display of Oldsmobile, Toledo, Franklin and White cars was daily visited by crowds, and the managers assert that those who meant business were handled much more satisfactorily than would have been possible at the Armory, with the result that the number of sales was at least equal to what could have been expected there.

A resolution indorsing Congressman Brownlow's good roads plan was unanimously passed by the New York Assembly January 25.

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SATURDAY, FEBRUARY 6, 1904.

RACING CLASSIFICATION.

Periodically the question of racing classification comes up for consideration. As the industry and sport develop, new problems are presented, and among these the most equitable and sportsmanlike method of pitting one builder's cars against another is extremely important. The present method employed by the A. A. A., based on weights, which follows European practice, does not seem to adequately cover American needs. Even under European conditions the classification by weights is not satisfactory.

Motor and car weights per horsepower have been so tremendously fined down in racing machines that the selection by weight is confusing rather than informing. The public associates the weight of a racing car with the weight of a road car, and is thus likely to get an erroneous idea of the performance of cars from the results of race meets. Surely not a desirable result from the builder's standpoint. The most obvious defect of the present rules, however, is the permission to enter cars of "all weights" in the same races. In the Florida tournament the races so arranged caused the elimination of any but the cars of highest horsepower in the preliminary heats. This had the effect of practically barring the cars of medium power from the finals and prevented close finishes in the preliminaries.

In our correspondence columns a well-known automobile engineer suggests a system of classification by piston displacement. This is certainly a more scientific method of selecting the entrants in races, and yet it is doubtful that an unyielding application of this rule would invariably give satisfactory results. Under such a classification the mechanical efficiency of the propelling mechanism would be an important factor. Applied to cars of generally similar construction such a method would be as fair for one as another. In the case of many highly meritorious American cars it is doubtful if they would make a good showing in competition with light foreign cars of the most refined construction were this rule to be rigorously applied.

As Mr. Birdsall implies, it would be ridiculous to pit the *Deutschland* against a tramp steamer. He might have added that it would be as sensible to match vessels of the same displacement, without regard to the other conditions of power and form, as it is to match automobiles by weight alone. Each in its class would make as good a showing as the quality of brains and materials that entered into its construction permitted.

Unquestionably the drift of our successful race meetings is toward the exposition of foreign cars. This is not as it should be. It gives the wrong impression. Road racing has made the foreign car what it is today, and this has been, so far, a means of improvement that our builders could not take advantage of. Our manufacturers have not been slow to learn the lessons of the reliability trials. How much they have profited was shown by the magnificent work of American cars in the last trials under conditions that not only stopped ordinary road travel but railroads as well. Let our racing authorities recognize this and so frame their regulations that we may have some spirited contests during the coming racing season between cars of American build. Close finishes are of as much interest to spectators who have paid gate money as time-smashing dashes that appeal to the eye chiefly in print.

A CASE OF SKIDDING.

A suggestive little contribution to the vexed question of skidding, lately came to notice in connection with a machine owned by a Brooklyn automobilist. This car has a light running gear and a rather powerful vertical motor, which is set unusually far forward. Consequently, when the tonneau is removed, the front axle carries considerably more than half the total weight, even with two passengers up. According to the owner, the rear wheels have never been known to skid; but the other day, wishing to rush an incline, he sent the car around an asphalted corner at a fair speed in the rain. The *front* end of the car slid off at a tangent, and one of the front wheels was wrecked against the curb.

One would doubtless be too hasty to conclude from such incidents as this that the heavy end of a machine is under all circumstances the end to skid; and it would certainly be a pity if it were, for in most machines the heavy end is the driving end, where most of the weight is wanted. Probably the safest conclusion to draw in the present case is that the heavy end, to be safe, should be heavy enough to make its tires, "cut through" the mud or grease to the surface below. If both front and rear tires are equally near being afloat, so to say, the end carrying the most weight will be the hardest to control. Unfortunately, the logical deduction from this would be to use narrow tires at the heavy end, which is quite out of the question when the roads are dry. so the whole subject is in the air again, and the only escape seems to be to use large tires with removable anti-skidding device. Won't somebody please invent a "non-skid" which can be attached in two minutes?

MINE INSPECTION BY AUTO.

Commercial uses for the automobile are not confined to the usually accepted types of commercial vehicle. Experience in the reliability of the ordinary forms of pleasure vehicle are gradually enlarging its sphere of operations. Among the first of the practical applications of the automobiles was as a conveyance for city and country physicians. The real estate dealer, the commercial traveler, the political candidate and others, whose occupations necessitate rapid movement over comparatively long distances, where ordinary modes of transit do not reach, have in turn come to depend upon the automobile as a necessary part of their business equipment. A service of this character, recently called to our attention by a mining engineer of international reputation, is interesting. A group of South African mines, in which he is interested, is scattered over a vast range of wild territory, and a part of the regular duties of the resident manager is the personal inspection of the properties. In the past it has been necessary to use relays of horses to take him over the route in a rough wagon. In all sixteen horses were so employed. Now, however, the journey is regularly undertaken in a modern touring car of medum power and it is accomplished in one quarter of the time previously taken. The manager's services to the company are thus increased fourfold in this work of inspection, and as he is a high salaried officer the saving in this respect alone would soon pay the original cost of the automobile. The horses have been sold.

However effective a temporary repair may be, a careful driver will never depend upon it any longer than is absolutely necessary. A defective part should be replaced with a perfect one; after that no further trouble need be anticipated from that source, which cannot be said of a repair.

UNFAVORABLE AUTO BILLS IN OHIO LEGISLATURE.

New Cleveland Representative Balks His Colleagues' Country Constituents and Drafts a More Equitable Bill.

GOV. MYRON T. HERRICK FAVORS FAIR LAWS

Special Correspondence.

CLEVELAND, Feb. 1.—A number of bills restricting the speed and regulating the use of automobiles are now pending before the Ohio State Legislature. Most of these bills were introduced by representatives from the country districts who evidently aim to please their farmer constituents whose horses have been startled by the sight of an automobile. Some of the measures introduced are ridiculous in the extreme.

But a new and vigorous champion of the rights of automobilists has developed within the past few weeks in the person of Henry Chisholm, a recently elected representative from this district. Mr. Chisholm is a member of the firm of Chisholm & Phillips, who have recently opened a new garage in the East End residence district of Cleveland.

By his attitude in the house last week, Mr. Chisholm earned the gratitude of all motorists in Ohio. A bill proposed by Mr. Bassett, of Toledo, was reported back to the House by the chairman of the turnpike committee, to which it had been referred and of which Mr. Chisholm is a member, with the recommendation that it be passed at once. The bill provided among other things that automobilists on country roads must not only stop when signaled by the driver of a horse, but must also stop the engine.

Mr. Chisholm declared that the members of the turnpike committee were trying to railroad through the bill without giving automobilists a hearing. He said that he had even told the Democratic representatives that he was willing for them to refer the bill to their "peerless leader," Tom L. Johnson. This fling was not appreciated by the Democrats, one of whom remarked that Tom Johnson and his "red devil" had created more havoc throughout the state than any half-dozen automobilists put together.

As a result of Mr. Chisholm's protests, the committee decided to give the automobilists and farmers a public hearing in the near future.

Saturday evening Mr. Chisholm came to Cleveland and held a conference in the rooms of the Cleveland Automobile Club with a number of the leading members. He presented the draft of a bill which he has prepared and will endeavor to substitute for the Bassett bill above mentioned. The Chisholm bill is much more liberal than any that has yet been introduced and met with the approval of the Cleveland club members, but few exceptions being taken to the provisions. The bill is patterned closely after one now under consideration by the general assembly of New York.

WOULD STOP TRACK RACING.

Senator Overturf, of Delaware, has introduced a measure which, if passed by the Legislature, will put an end to automobile racing in Ohio. It will limit the speed at which automobilists may travel in the country at twenty miles an hour, and in cities and towns at ten miles, and provides that "in no case and nowhere shall the speed exceed thirty miles an hour." This would put a stop to track racing.

Representative Lehman, of Sandusky, has introduced still another automobile bill. By it auto drivers must stop upon signal from horse drivers, carry white lights in front and red lights in the rear at night; cities may limit the speed to eight miles an hour in city centers and to fifteen miles in the suburbs, and motorists must slow down to ten miles an hour when passing schools and churches. The penalty is from $5 to $100.

GOVERNOR HERRICK INTERESTED.

Governor Myron T. Herrick, himself an enthusiastic automobile operator, is taking an interest in the several bills before the Legislature and it is thought that he will lend his influence to defeat any measure that he considers unreasonably unfavorable to automobilists. Speaking of the Bassett bill a few days ago, he said that in his opinion the provision relating to the stopping of the engine was too drastic and would work too much hardship upon automobilists. The Governor hopes that a bill fair to both the farmers and automobilists will be passed by both Houses. He said that in New York some drivers of horses on country roads annoy motor car drivers who stop on signal by passing the automobile at a snail's pace, or by stopping their horses and compelling motorists to wait for some time.

NEW YORK ASSEMBLYMEN ENDEAVORING TO IMPROVE AUTO LAWS.

ALBANY, Feb. 2.—There seems at the present time no disposition on the part of the Legislature to oppose the passage of the Hill bill to provide a new automobile law for the State which shall be simple and compact and not foolishly restrictive.

Assemblyman Cocks, who formerly supported many of the drastic provisions of the present Bailey law, has this year introduced in the Assembly the Hill bill, drawn by the Legislative Committee of the New York State Automobile Association. He says he will support it, and that he is trying to prepare a satisfactory amendment which will cover the unincorporated villages and regulate speed in them to, possibly, fifteen miles an hour, but finds it very difficult. The scheme of a post and signboard half a mile from a post-office has not proved satisfactory, and he is trying to devise some other regulation that will apply to those thickly settled portions of Long Island which are neither villages nor cities. Assemblyman Cocks says he may also ask for the insertion of a clause omitting the motor bicycle from the law's provisions.

Senator Armstrong and others interested in highway traffic will urge legislation giving cities the right to limit the speed of automobiles and other vehicles. The rates of speed as fixed by the State are objectionable to a number of members of the Senate and Assembly. Senator Amblier expresses his views in the matter as follows:

"What does the Legislature know of the conditions in New York City, Rochester, and other cities? Eight miles is too dangerous a rate to run any vehicle in Twenty-third Street in New York City at certain times, yet the city is powerless to make a change. It should be left to the municipality to fix the local speed limits."

The Assembly Committee on Internal Affairs to-day reported, with an amendment for reprinting and recommended to the committee, an amendment to the Cocks bill providing that every chauffeur must obtain a license from the Secretary of State. A non-transferable badge must be worn by each chauffeur and the fee for license is to be $2.

(Special Telegram.)

ALBANY, Feb. 3.—A hearing on Senator Hill's automobile bill (the N. Y. S. A. A. bill) has been set for next Wednesday, February 10, before the Senate Committee on Roads and Bridges.

AUTO BILL INTRODUCED IN RHODE ISLAND LEGISLATURE.

NEW LONDON, Conn., Feb. 1.—A topic of discussion among many persons in Southern New England who are interested in automobiling, is a new bill introduced by Representative Kane, from Narragansett, in the Rhode Island House of Representatives. The bill in some features follows the Massachusetts law, although it is not so explicit or definite, and seems to depend upon interpretation by the courts for much of its efficiency.

The bill calls for the licensing of autos by the Secretary of State, for which a fee of $2 is charged. When the license is obtained the measure provides that a certificate shall be issued containing a number which shall be displayed on the machine in some manner prescribed by the Secretary of State. Dealers and manufacturers may take out licenses for which they will be charged $10, and each one procuring such a license shall be assigned a distinguishing mark, which must be displayed on each machine that is owned by the said dealer or manufacturer. All numbers must be four inches high on the signs that are displayed on the machines "and conforming in this and other details to the requirements prescribed by the Secretary

(Continued on page 181).

Summaries of the Ormond-Daytona Events.

NEW STRAIGHTAWAY RECORDS MADE IN FLORIDA TOURNAMENT.

GASOLINE CARS.

Distance.	Driver.	Car.	Time.
1 mile	W. K. Vanderbilt, Jr.	90-hp. Mercedes	:39
5 miles	W. K. Vanderbilt, Jr.	90-hp. Mercedes	3:31 3-5
10 miles	W. K. Vanderbilt, Jr.	90-hp. Mercedes	6:50
15 miles	H. L. Bowden	60-hp. Mercedes	10:18
20 miles	W. K. Vanderbilt, Jr.	90-hp. Mercedes	17:02
30 miles	W. K. Vanderbilt, Jr.	90-hp. Mercedes	24:11
40 miles	W. K. Vanderbilt, Jr.	90-hp. Mercedes	33:52 2-5
50 miles	W. K. Vanderbilt, Jr.	90-hp. Mercedes	40:49 4-5

STEAM VEHICLES.

Distance.	Driver.	Car.	Time.
1 kilometer	Louis S. Ross	6-hp. Stanley	:34 2-5
1 mile	Louis S. Ross	6-hp. Stanley	:55 2-5

ELECTRIC RACING MACHINE.

Distance.	Driver.	Car.	Time.
1 kilometer	W. J. Hastings	Baker Torpedo Kid.	:37 2-5
1 mile	W. J. Hastings	Baker Torpedo Kid.	1:00 3-5

SUMMARY OF RACES AND SPEED TRIALS.

WEDNESDAY, JANUARY 27.

First Event—Special Match Race Fifteen Miles.

Between W. G. Brokaw (30-hp. Renault)
B. M. Shanley, Jr. (40-hp. Decauville).

1st heat. Won by W. G. Brokaw. No time taken.
2d heat. Won by W. G. Brokaw. Time, 19:51 4-5

Second Event.—Special Match Race, Fifteen Miles.

Between H. L. Bowden (60-hp. Mercedes)
S. B. Stevens (60-hp. Mercedes).

1st heat. Won by H. L. Bowden. Time, 10:18

THURSDAY, JANUARY 28.

First Event.—One Mile Championship A. A. A.

1st heat. Won by W. K. Vanderbilt, Jr. (90-hp. Mercedes). Time, :48 4-5
Second—H. L. Bowden (60-hp. Mercedes). Time, :50
Third—B. M. Shanley, Jr. (40-hp. Decauville). No time.
2d heat. Won by Barney Oldfield (90-hp. Winton). Time, :43
Second—S. B. Stevens (60-hp. Mercedes). Time, :45 2-5
Third—W. G. Brokaw (30-hp. Renault). Time, :48 3-5
Final. Won by Barney Oldfield (120-hp. Winton). Time, :46 2-5
Second—W. K. Vanderbilt, Jr. Time, :49 3-5
Third—S. B. Stevens. No time.

Second Event—Five Mile Invitation—Gentlemen Operators.

1st heat. Won by Jas. L. Breese (40-hp. Mercedes). Time, 5:18 3-5
Second—Wm. Wallace (30-hp. DeDietrich). No time.
Third—J. Insley Blair (35-hp Panhard). No time.

2d heat and final postponed until Friday.

FRIDAY, JANUARY 29.

First Event—One-Mile Invitation—Class B—Gentlemen Operators.

1st heat. Won by H. L. Bowden (60-hp. Mercedes). Time, 51 4-5
Second—W. G. Brokaw (30-hp. Renault). No time.
Third—J. L. Breese (40-hp Mercedes). No time
2d heat. Won by W. K. Vanderbilt, Jr. (90-hp. Mercedes). Time, :47 3-5
Second—S. B Stevens (60-hp. Mercedes). Time, :50 1-5
Final. Won by W. K. Vanderbilt, Jr. Time, :48
Second—H. L. Bowden. Time, :51

Second Event—One Mile—1:05 Class—Class A.

Won by H. L. Bowden (60-hp. Mercedes). Time, .52 2-5
Second—F. A. LaRoche (40-hp. Darracq). Time :55 1-5
Third—J. Insley Blair (35-hp. Panhard). Time 1.06 3-5

Third Event—One Mile—56 Second Class—Class A.

1st heat. Won by H. L. Bowden (60-hp. Mercedes). Time, :48
Second—S. B. Stevens (60-hp. Mercedes). Time, :48 4-5
Third—W. G. Brokaw (30-hp. Renault). Time, :49
2d heat. Won by F. A. LaRoche (40-hp. Darracq). Time, :53 2-5
Second—B. M. Shanley, Jr. (40-hp. Decauville). Time, :57
Third—Wm. Wallace (30-hp. DeDietrich). No time.
Final. Won by H. L. Bowden. Time, :50 4-5
Second—F. A. LaRoche. Time, :54
Third—W. G. Brokaw. Time, :56 3-5

Fourth Event—One Mile Motorcycle Handicap.

Won by G. H. Curtis (5-hp. Curtis). Time, :59 1-5
Second—Oscar Hedstrom (5-hp. Indian). Time, 1:04
Third—W. W. Austin (1 3-4 hp. Indian). Time, 1.09 1-5

Fifth Event—Five-Mile Invitation—Class B—Gentlemen Operators.

1st heat. Won Thursday by Jas. L. Breese. Time, 5:18 3-5
2d heat. Won by W. K. Vanderbilt, Jr. (90-hp. Mercedes). Time, 3:38 1-5
Second—S. B. Stevens (60-hp. Mercedes). Time, 3:39
Third—H. L. Bowden (60-hp. Mercedes). Time, 3:46 3-5
Final. Won by W. K. Vanderbilt, Jr. Time, 3:34 3-5
Second—S. B. Stevens. Time, 3:41 4-5
Third—Jas. L. Breese. No time.

Sixth Event—Five-Mile Free-for All.

1st heat. Won by Barney Oldfield (90-hp. Winton). Time, 3:48 4-5
Second—F. A. LaRoche (40-hp. Darracq). Time, 4.01 2-5
Also Started—W. G. Brokaw (30-hp. Renault) and L. S. Ross (6-hp. Stanley).
2d heat. Won by W. K. Vanderbilt, Jr. (90-hp. Mercedes). Time, 3:40
Second—H. L. Bowden (60-hp. Mercedes). Time, 3:55 1-5
Final. Won by W. K. Vanderbilt, Jr. Time, 3:31 3-5
Second—H. L. Bowden. Time 3:40 4-5
Barney Oldfield (Winton) unable to start.

Seventh Event—Five Miles for Two-Passenger Runabouts.

Won by L. S. Ross (6-hp. Stanley steamer). Time, 7.53 1-5
Second—Capt. H. L. Willoughby (11-hp. Autocar). No time.

Eighth Event—Five-Mile Handicap—Classes A and B.

Won by S. B. Stevens (60-hp. Mercedes) scratch. Time, 4:00 3-5
Second—Jas. Tracey (70-hp. Peerless) 5 sec. hdcp. Time, 4:28 1-5
Third—F. A. LaRoche (40-hp. Darracq) 35 sec. hdcp. Time, 5:05 1-5
Fourth—J. Insley Blair (35-hp. Panhard) 50 sec. hdcp. Time, 5:46 1-5

SATURDAY JANUARY 30.

First Event—Fifty Mile Championship A. A. A.

Won by Wm. K. Vanderbilt, Jr. (90-hp. Mercedes). Time, 40:49 4-5
Second—H. L. Bowden (60-hp. Mercedes). Time, 42.44 2-5
Third—J. Insley Blair (35-hp. Panhard). Time, 57:08 3-5
Also Started—F. A. LaRoche (40-hp. Darracq)
W. G. Brokaw (30-hp. Renault).

Second Event—Ten-Mile Invitation—Class B—Gentlemen Operators.

Won by W. K. Vanderbilt, Jr. (90-hp. Mercedes). Time, 6:50
Second—S. B. Stevens (60-hp. Mercedes). Time, 7:03 1-5
Third—H. L. Bowden (60-hp. Mercedes). Time, 7:08
Fourth—Jas. L. Breese (40-hp. Mercedes). Time 9:29 1-5
Fifth—Walter Christie (30-hp. Christie). Time, 9:35

Third Event—Ten-Mile Motorcycle Handicap

Won by G. H. Curtiss (5-hp Curtiss). Time, 8.54 2-5
Also Started—Oscar Hedstrom (5-hp. Indian) and W. W. Austin (1 3-5 hp. Indian)

Fourth Event—Ten-Mile Championship A. A. A.

Won by W. K. Vanderbilt, Jr. (90-hp. Mercedes). No time.
Second—H L. Bowden (60-hp. Mercedes). No time.
Third—B. M. Shanley (40-hp. Decauville). No time.

Fifth Event—Twenty-Mile Handicap—Classes A and B.

Won by H. L. Bowden (60-hp. Mercedes) Scratch. Time, 18:40
Second—S. B. Stevens (60-hp. Mercedes) Scratch. Time, 18.50 2-5
Third—Walter Christie (30-hp. Christie) 150 sec. hdcp. No time.
Fourth—B. M. Shanley (40-hp. Decauville) 90 sec. hdcp. No time.
Fifth—Jos. Tracey (70-hp Peerless) 30 sec. hdcp. No time.
Also Started—F. A LaRoche (40-hp. Darracq) 150 sec. hdcp.
J. Insley Blair (35-hp. Panhard) 170 sec. hdcp.

Sixth Event—Ten-Mile Handicap—Classes A and B.

Won by S. B. Stevens (60-hp Mercedes) Scratch. Time, 7.28 4-5
Second—H. L. Bowden (60-hp. Mercedes). Scratch. Time 7:38 1-5
Third—H. L. Willoughby (11-hp. Autocar) 185 sec. hdcp. Time, 13:35 1-5

RACES WON BY INDIVIDUALS.

Mr. W. K. Vanderbilt, Jr., New York.
(90-hp. Mercedes.)

One-mile Invitation. Time, 48 seconds.
Five-mile Invitation. Time, 3:34 3-5.
Five-mile Free-for-All. Time, 3:31 3-5
Ten-mile Invitation. Time, 6.50.
Ten-mile Championship. No time taken.
Fifty-mile Championship. Time, 40:49 4-5.

Mr. H. L. Bowden, Boston.
(60-hp. Mercedes.)

One-mile, 56-second class. Time, 48 seconds.
One-mile, 1:05 class. Time, 52 2-5 seconds.
Fifteen-mile Match Race. Time, 10:18.
Twenty-mile Handicap. Time, 18:40

Mr. S. B. Stevens, Rome, N. Y.

Five-mile Handicap. Time, 4:00 2-5.
Ten-mile Handicap. Time, 7:28 4-5.

Mr. Barney Oldfield, Toledo, O.
(120-hp. Winton.)

One-mile A. A. A. Championship. Time, 46 2-5 seconds.

Mr. M. G. Bernin, Paris, France.
(With W. Gould Brokaw's 30-hp. Renault.)

Fifteen-mile Match Race Time, 12:51 4-5.

Mr. Louis S. Ross, Boston.
(6-hp. Stanley Steamer.)

Five-mile Race for Runabouts. Time, 7:53 4-5.

Mr. G. H. Curtiss, Hammondsport, N. Y.
(Curtiss 5 hp.)

One-mile Motorcycle Race. Time, 59 1-5 seconds.
Ten-mile Motorcycle Championship Time, 8 54 2-5.

PERFORMANCES OF THE CARS.

No. 1—90-hp. Mercedes. Owned and driven by W. K. Vanderbilt, Jr.
1 mile—Special trial against time. World's record, 39 Seconds.
1 mile Championship—Won 1st heat :48 4-5..Second in final ..... :49 3-5
1 mile Invitation.....Won 2nd heat :47 3-5..Won final ..... :48
5 mile Invitation.....Won 2nd heat 3:38 1-5..Won final 3:34 3-5
5 mile Free-for-All....Won 2nd heat 3:40 ..Won final 3:31 3-5
10 mile Invitation.....Won race.... 6:50
10 mile Championship..Won race....No time taken.
50 mile Championship..Won race....40:49 4-5
No. 2—40-hp. Decauville. Owned by B. M. Shanley. Driven by E. Fredericks.
1 mile Championship..Third in 1st heat. No time taken.
1 mile 56-second class..Second in 1st heat. Time 57 seconds.
10 mile Championship..Third place. No time taken.
20 mile Handicap.....Fourth place. No time.
No. 3—60-hp. Mercedes. Owned and driven by H. L. Bowden.
1 mile Championship..Second in 1st heat. Time 50 seconds.
1 mile Invitation.....Won 1st heat 51 4-5 seconds. Second in final 51 seconds.
1 mile 1:05 class.....Won race. Time 52 2-5 seconds.
1 mile 56-second class..Won 1st heat 48 sec. Won final 50 4-5 sec.
5 mile Invitation.....Third place in 2nd heat. Time 3:46 3-5.
5 mile Free-for-All....Second in 2nd heat 3:55 1-5. Second in final 3:40 4-5
10 mile Invitation.....Third place. Time 7:08.
10 mile Championship..Second place. No time taken.
10 mile Handicap.....Second place. Time 7:38 1-5.
15 mile Special match against S. B. Stevens. Won. Time 10:18.
20 mile Handicap.....Won from scratch. Time 18:40.
50 mile Championship..Second place Time 42:44 2-5.
No. 4—60-hp. Mercedes. Owned and driven by S. B. Stevens.
1 mile Championship..Second in 2nd heat 45 2-5 sec. Third in final. No time.
1 mile Invitation.....Second in 2nd heat. Time 50 1-5 seconds.
1 mile 56-second class..Second in 1st heat. Time 48 4-5 seconds.
5 mile Invitation.....Second in 2nd heat 3:39. Second in final 3:41 4-5.
5 mile Handicap.....Won race. Time 4:00 3-5
10 mile Invitation.....Second place. Time 7 03 1-5.
10 mile Handicap.....Won race from scratch. Time 7:28 4-5.
20 mile Handicap.....Second place from scratch. Time 18:50 2-5.
No. 5—40-hp. Darracq. Owned and driven by F. A. LaRoche.
1 mile 1:05 class.....Second place. Time 55 1-5 sec.
1 mile 56-second class..Won 2nd heat 53 2-5 sec. Second in final 54 sec.
5 mile Free-for-All....Second in 1st heat 4:01 2-5.
5 mile Handicap.....Third place with 35 sec. handicap. Time 5:05 1-5.
No. 6—30-hp. Renault. Owned by W. G. Brokaw. Driven by Morris Bernin.
1 mile Championship..Third in 2nd heat. Time 48 3-5 sec.
1 mile Invitation.....(Owner driving) Second in 1st heat. No time.
1 mile 56-second class..Third in 1st heat 49 sec. Third in final 56 3-5 sec.
15 mile Special match against B. M. Shanley. Won 2 heats. Time, 12:51 4-5.
No. 7—5-hp. Indian Motorcycle. Owned and ridden by Oscar Hedstrom.
1 mile Handicap. Second place. Time, 1:04.
No. 8—8-hp. DeDion. Owned by W. G. Brokaw. Did not start.
No. 9—40-hp. Mercedes. Owned and driven by Jas. L. Breese.
1 mile Invitation.....Third in 1st heat. No time taken.
5 mile Invitation.....Won 1st heat, 5:18 3-5. Third in final. No time.
10 mile Invitation.....Fourth place. Time, 9:29 1-5.
No. 10—6-hp. Stanley Steamer. Owned and driven by Louis S. Ross.
5 mile 2-passenger runabouts. Won race. Time, 7:53 1-5.
No. 11—1 3-4 hp. Indian Motorcycle. Owned and ridden by W. W. Austin.
1 mile Handicap. Third place. Time 1:09 1-5.
No. 12—6-hp. Stanley Steamer. Owned by H L. Bowden. Did not start.
No 13—30-hp. DeDietrich. Owned and driven by Wm. Wallace.
1 mile 56-second class. Third in 2nd heat. No time.
5 mile Invitation. Second in 1st heat. No time.
No. 14—30-hp. Christie. Owned and driven by Walter Christie.
10 mile Invitation. Fifth place. Time, 9:35.
20 mile Handicap. Third place with 150 seconds handicap. No time.
No. 15—24-35-hp. Panhard. Owned by J. Insley Blair. Driven by M. W. Ehrlich.
1 mile 1:05 class Third place. Time, 1:06 3-5.
5 mile Invitation. Third place in 1st heat. No time.
5 mile Handicap. Fourth place with 50 seconds handicap. Time, 5:46 1-5.
50 mile Championship. Third place. Time, 57:08 3-5.
No. 16—1 1-2 hp. Baker Electric. Owned by Walter C. Baker. Mile in 1:00 3-5.
No. 17—11 hp. Autocar. Owned and driven by H. L. Willoughby.
5 mile 2-passenger runabout. Second place. No time.
20 mile Handicap. Third place with 185 seconds handicap. Time, 13:35 1-5.
No. 18—70-hp. Peerless. Owned by L. P. Mooers. Driven by Jos. Tracey.
5 mile Handicap. Second place with 5 seconds handicap. Time, 4:28 1-5.
20 mile Handicap Fifth place with 30 seconds handicap. No time.
No. 19—90-hp Winton. Owned by manufacturer. Driven by Barney Oldfield.
1 mile Championship. Won 2nd heat. Time, 43 sec. Won final Time, :46 2-5
5 mile Free-for All. Won 1st heat. Time, 3:48 4-5.

(Continued from page 179.)

of State in his certificate of registration." The bill provides that those who are licensed in other States may operate autos in Rhode Island "subject, however, to the speed limitations contained in section 8, and to any local regulations permitted under Section 13, and to such further regulations as the Secretary of State may make."

Speed in the country districts is limited to fifteen miles an hour; in cities and towns it must be reduced to ten miles, and in going around corners, over crossings, etc., only eight miles will be permitted.

Penalty for the violation of this act is to be, if the bill becomes a law, $25 for the first offense and $50 for the second and subsequent offences, and the penalty for running a motor car or motorcycle after the suspension of a certificate is to be $10. Section 10 of the bill provides that every automobile shall have a muffler, a horn or bell, or some other suitable means of signaling; also a lamp which shall be kept lighted while the auto is in a public place from one hour after sunset until one hour before sunrise, and it is also required that the registration number of each auto shall be placed upon a lantern in such a way as to be conspicuous at night. A locking device is required and this must be always fastened to the machine whenever it is left alone in any public place.

The measure is made extraordinarily elastic by the privilege that is granted in the thirteenth section, which provides that "boards of aldermen of cities and the selectmen of towns may make special regulations as to the speed of automobiles, motor cars and motorcycles, and as to the use of such vehicles upon particular roads or ways, including the right to exclude them altogether therefrom."

The bill appears to have been a surprise to those who are interested in automobiles, but as one man said, this must not be taken to mean that they are opposed to it. For a long time the automobilists of Rhode Island have desired some kind of legislation that would regulate the operation of autos, for at present the only laws that govern are those made by certain towns, which vary a great deal in requirements and effectiveness, and one general State law which provides that no automobile shall be raced on the public roads. However, there does not seem to be a desire for a radical measure and among the conservative there is a general opinion that there are too many features in Representative Kane's bill discriminating against the automobilist.

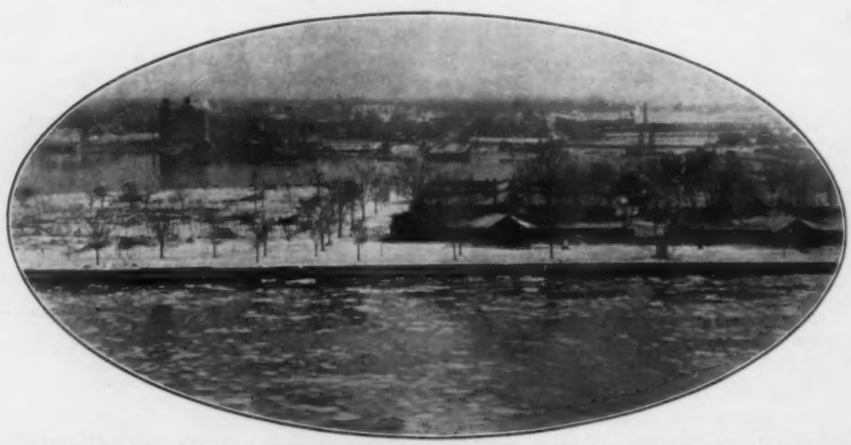
Cause of the Accident to M. W. Ehrlich.

Special Correspondence.

DAYTONA, Jan. 30.—The accident to M. W. Ehrlich, who essayed a spectacular turn at this end of the ten-mile stretch in the twenty-mile handicap, was caused by his attempt to take the turn at too great speed. Ehrlich was driving J. Insley Blair's 24-35 horsepower Panhard and although cautioned after making a sensational turn in the 50-mile, he evidently underestimated the speed of the car as he crossed the tape at the end of the first ten of the 20-mile event. As the car swung around, the inside wheels left the sand and the rear outside wheel, on the right of the car, gave way, the spokes digging into the hard beach and throwing sufficient strain on the right front wheel to cause it to collapse. The momentum was so great that the car seemed to be hurled through the air, alighting about fifty feet beyond the spot where the wheels gave way. Ehrlich was thrown out and slid about twenty feet on the sand, sustaining a number of cuts and bruises. It was thought he was severely injured but after regaining consciousness and submitting to a careful examination it was found that beyond superficial cuts the only damage suffered was a dislocated shoulder.

OPENING OF THE SMITH AND MABLEY FACTORY FOR HIGH GRADE CARS.

In the automobile industry, New York bears the same relation to the rest of the country as Paris does to France, and yet it is a strange fact that in recent days it has not included within its corporate limits a single automobile factory. Single machines have been built, and indeed small shops for their construction exist in the city, but up to the present no shop for the production of cars in commercial quantities. With the opening of the new plant of Messrs. Smith & Mabley this condition no longer exists. This new headquarters for the construction of high-grade cars was launched, as it were, on last Tuesday afternoon, the occasion being marked by one of the pleasantest little informal social meetings in the brief local history of the trade. Invitations were issued by Messrs. Smith & Mabley to a number of their customers, and members of the trade and the newspaper fraternity.



EAST RIVER AND BLACKWELL'S ISLAND FROM SMITH & MABLEY'S PLANT.

This pioneer factory in the Metropolis occupies an extensive seven-story factory building standing upon the high banks of the East River at the foot of East 83rd Street. From its windows a magnificent panorama of the swift running river with its great fleets of water-borne craft can be had. Though occupied but a few weeks for its present purpose, the factory was in an advanced state of preparedness that was surprising. From the roof down each floor had been apportioned for some particular branch of the manufacture of cars—pattern making, tool making, machining, assembling—the installation of machines including the newest types for the output of exact work on scientific principles.

It is the purpose of Messrs. Smith & Mabley to put on the market their new Simplex car in two sizes—18-22 horsepower and 30 horsepower. In addition to the engines for these cars they will construct motors of 75 and 150 horsepower, the latter for use especially in auto boats. Two of the new cars were on exhibition in the ground floor showroom, one car finished in aluminum, natural color, that was exhibited at the Madison Square show. The other car with a demonstration body was shown in operation. Those who rode in it were impressed with its smoothness of running, great flexibility and "liveliness" and remarkable ease of control. In explanation of these results Mr. Mabley, who acted as host in the absence of Mr. Smith in the South, said that it was the result of three years' careful study of the merits and defects of foreign cars with a fixed determination to secure the maximum of efficiency with the minimum of complexity. Giving credit where credit is due, the builders have really produced a fine example of the modern high-grade French type automobile, evolved out of their intimate acquaintance with all the leading types of foreign cars.

Great interest was also taken by the visitors in the auto boat *Vingt et Un* which lay in the shops. The same careful work that makes the Simplex car notable was manifest in its construction and equipment. At a chatty luncheon the success of the new venture in the production of automobiles and auto boats was pledged most heartily.

The building of these cars is the undertaking of the Smith & Mabley Mfg. Co., the stock of which is controlled by Messrs. Smith and Mabley, Herman Brossel and J. S. Bunting. Mr. Bunting was formerly manager of the Wanamaker Automobile Department, and Mr. H. Brossel is a member of the importing firm of Broessncck, Brossel & Co., of New York. The present salesrooms and garage of Messrs Smith & Mabley, at 38th Street and Seventh Avenue will continue to be occupied. There minor repairs and adjustments will be made as heretofore, but the heavier work will be carried on at their new factory. In a future issue we shall give additional details of this new and important addition to the American automobile factories.

Boston Motor Boat Exhibition.

BOSTON, Feb. 1.—The first annual Motor Boat, Canoe and Boat Equipment Show of the New England Motor Boat Association is to be held in Horticultural Hall, this city, from March 14 to 19, inclusive. These dates are coincidental with those of the Boston Automobile Show, which is to be held in Symphony Hall, directly opposite Horticultural Hall on the corner of Massachusetts and Huntington Avenues, and arrangements have been made with the Boston Automobile Dealers' Association whereby one admission ticket (50 cents) will admit to both shows, the object being to increase the attendance at both exhibitions.

New Incorporations.

Hayden Automobile Co., Chicago; capital, $10,000; to manufacture motor cars. Incorporators: H. W. Haynes, R. W. Dunn, J. B. Devitt.

Jackson Engine & Motor Co., Jackson, Mich; capital, $30,000.

The Norris Auto Co., Saginaw, Mich.; capital, $12,000.

Mitchell Motor Car Co., of Racine, Wis; to manufacture automobiles and motorcycles; capital stock, $300,000. The stockholders were nearly all interested in the Wisconsin Wheel works, which last fall sold its bicycle stock to an Indiana concern. The plant will be remodeled.

The Energine Co. of Cleveland, O.; capital, $10,000. Incorporators, R. P. Beardslee, F. B. Many, George G. Whitcomb, George H. Kelly, and F. B. Williams. The officers will be Thomas K. Wright, Detroit, president; R. P. Beardslee, vice-president; and F. B. Many, secretary and treasurer.

Richmond Automobile Company, New York; manufacturing meters, etc.; capital, $10,000. Incorporators: K. K. McGonegal, C. J. Campbell and J. H. Kellum.

Carlson Motor Vehicle Co., New York; to build automobiles, etc.; capital, $100,000. Incorporators: Charles A. Carlen, Leopold Sondheim and Eugene Sondheim.

Williams Air Compressor Co., of Indianapolis; to manufacture automobiles, automatic air brakes, air compressors, engines and motors; capital stock, $40,000. Incorporators: John W. Williams, Alpheus G. Schlomocker and John M. Teitzuch, all of Indianapolis.

Plans are being made for an early spring automobile tournament similar to the Florida events of last week to be held along Virginia Beach about fifteen miles east of Norfolk and half a day's travel by rail from New York. There is a fine sand course at this place extending nearly fifty miles in the direction of Cape Hatteras. A number of the enthusiasts at Ormond have promised to be competitors.

The White Sewing Machine Company, Cleveland, O., wishes to inform the public that H. H. Conners of Washington, D. C., is in no way connected with the company's automobile department and has no authority to represent them.

ICY STREETS DEMONSTRATE MOTOR DELIVERY SUPERIORITY.

Special Correspondence.

PHILADELPHIA, Feb. 1.—Never since the advent of the commercial automobile in the streets of the Quaker City has its efficiency been so well demonstrated to local merchants as during the past month. A light snowfall on January 23 was followed by a rain, and when "the beautiful" had acquired the consistency of the water ice of commerce, a fierce siege of zero weather descended, with the result that the business world awoke Monday morning to a city of glittering streets.

With horses falling right and left, the department stores especially were badly handicapped, and but for the fact that the majority of them are experimenting with the motor delivery problem, and have several self-propelled wagons on the streets, few deliveries could have been made. As it was, it required eighteen hours' work a day on the part of the auto delivery wagons and their crews to keep the accumulations of packages down to reasonable proportions; and, even then, it was not until the warm rains of Friday and Saturday had removed the streets' icy covering that the delivery departments caught up with their work.

Meanwhile the butcher, milkman, baker, grocer, and the coal man, did the best they could, with the result that hundreds of horses were ruined and had to be killed. Such was the demand upon blacksmiths for "roughing" that they were compelled to work night and day with full forces of assistants. This protection, however, seemed to benefit the horses but little, and the poor animals made very little headway against the adverse conditions.

It was a forcible argument for the business automobile, and one which will undoubtedly bear fruit in the very near future.

MANY KANSAS CITY PEOPLE SEEKING GOOD HILL CLIMBERS.

Special Correspondence.

KANSAS CITY, Jan. 30.—Buyers of automobiles here demand machines of high power in relation to weight, which is an absolute necessity because of the many steep hills. Many persons are ready to buy as soon as the new models are ready. They have had time to see others demonstrate that the automobile is what is claimed for it. A large proportion of them belong to the conservative element, which would not have bought last year.

Last season's use determined the cars that are best adapted to the town, and these will be pushed by dealers this year practically to the exclusion of others. Cobblestones and asphalt, level roads and 20 per cent. grades must look alike to the successful automobile here. Three or four machines should be sold here this year to every one placed in 1903, unless the delegation in attendance at the shows places orders with the manufacturers at their stands. Seventeen local men will go to Chicago. They are on the lookout for big cars. They are in most cases the pioneers who ran the first runabouts through Kansas City streets, but now they have the touring-car itch.

Richter Bros., who have moved into the well-arranged garage formerly occupied by the Day Automobile Company, in East Eleventh Street, will handle the Haynes-Apperson, the Apperson Bros., the Franklin and the Toledo this year, with the possible addition of a runabout line. The firm will soon be incorporated under the name of The Automobile Company, with D. F. Piazzek, president. The directors will include Edwin and Walter Richter. Preston Dobbin will be retained as manager.

This is the most modern garage in the city. The ground story, which is floored with cement, is divided into showroom, offices, and repair shop for heavy work. There is also a washroom and provision for an ingenious method of storing oils. On an upper floor the light machine work is done. A large freight elevator permits lifting the machines to the upper story.

Fred Patee, whose quarters are in the same building, is handling the Cadillac exclusively. His territory extends from Dakota to Oklahoma. In Texas he says he has already sold two car loads of runabouts. If the trip of Mr. Richter to the East does not lead him to add a machine of the latter type to his stock, Mr. Patee will be given the chance to handle this trade.

Sales of the White touring car will be pushed by the Kansas City Automobile Company, which has its garage on McGee Street, near Twelfth. The White has done well in its trials here so far. The Kansas City company is also handling the Ford, the Rambler and Rambler delivery wagon, and may add other machines to its line before the season opens in earnest.

E. P. Moriarty & Co. have announced a complete line for 1904, including light and heavy runabouts, delivery wagons and light and heavy American touring cars. This is the list: Oldsmobile runabout, touring car and delivery wagon; Pierce Arrow and Great Arrow; Stevens-Duryea; Winton and Autocar. An old church, at the corner of Tenth Street and Grand Avenue, artistically fitted up, serves this firm as a garage. The entrance from the street is at a grade that will test the hill-climbing qualities of any machine. A complete machine shop is a part of the establishment.

If the dealers do as much business as they expect to do, they will be forced either to seek larger buildings or to enlarge the present ones.

White Steam Car Improvements.

A number of changes from last year's model have been made in the 1904 White steam car The dimensions of the tonneau are increased and the upholstery is more luxurious. The condenser is protected from the engine heat by a wind shield, which at the same time increases the efficiency of the engine. Hand pumps have been fitted to the automatic oil-cups on the dash. The springs have been slightly changed, so that the suspension of the body is unusually comfortable and safe. Increased dimensions will be noted in the Cardan joints and in the live rear axle, which is now 3-16 inch larger than in last year's car.

The 30-inch wheels are shod with 4-inch Goodrich clincher tires of special quality.

Big New Garage For 'Frisco.

Special Correspondence.

SAN FRANCISCO, Jan. 25.—The Mobile Carriage Company of San Francisco has now secured a block on Golden Gate Avennue and Gough Street, facing Jefferson Park, and will build a large garage. The lot is 137 1-2 by 120 feet. The building will be of one story and will be used for automobile purposes exclusively. The salesroom will have a wooden floor and the garage will be concreted. There will be reception rooms for ladies, for gentlemen, a clubroom for the employes and a commodious office.

The Mobile Carriage Company has bought the Pacific Coast interests of the Mobile Company of America and is agent for the Pierce and Northern cars. The company will open a branch in Los Angeles. Experts have been brought out from Chicago to superintend the garage and the gasoline machine repair department. To supply the needs of its passenger service, a carload of Santos-Dumont touring cars and Fredonia touring cars has been purchased. The directors of the Mobile Car riage Company are J. A. Marsh, president; Livingston Jenks, Heber C. Tilden, Charles K. Harley and Charles L. Tilden.

Washington Co-operative Garage Company.

Special Correspondence.

WASHINGTON, Feb. 1.—The Mutual Automobile Storage Company, which was incorporated recently under the laws of the District, with a capital stock of $60,000, by Samuel W. Pickford, Alexander M. Speer, Jr., William G. Kinsman and Charles T. Richardson, of this city, and Nathan H. Baker, of Laurel, Md., is a coöperative organization. It is the intention of the promotors to ask all automobile owners to become stockholders and to receive the services of the company at cost after expenses and salaries of officers are deducted.

The company has purchased a large plot of ground at the corner of 14th and R streets, and will erect on it a large building to cost $20,000, and to be occupied as an automobile storage plant. It will be of fireproof construction, two stories high and with a frontage of 50 feet and a depth of 156 feet. The building will be of sufficient size to accommodate 140 automobiles.

News Notes and Trade Items

The New England agency for the Decauville car has been placed with the Lewis & Matthews Co., 66 and 68 Stanhope Street, Boston, Mass.

A new agency for the Pierce car in Boston has been given to the firm of Dowling & Maguire, who are opening a new automobile salesroom on Boylston Street.

The Excelsior Supply Co., of Chicago, has taken possession of its new building at 232-4-6 East Randolph Street, and, in addition to jobbing bicycle sundries, will handle automobile supplies on a large scale.

Contracts for more than 4,500 Oldsmobiles for delivery in 1904 are reported to have been made during the week of the Madison Square Garden show. One order for 650 machines was booked from a Philadelphia house.

The Westinghouse company has recently closed a contract for gas engines for installation in the motor car works of B. Napier & Son at Acton, London. The plant will be used for the generation of light and power.

Representatives of the Olds Motor Works were approached at the New York show by an aspiring motorist who proposed to make an attempt to reach the north pole by automobile. The proposition was not accepted with alacrity.

Managers Wagner and Lewis, of tne Buffalo automobile show to be held from March 7 to 12 in Convention Hall, Buffalo, report that 65 per cent. of the exhibitors at the New York show have agreed to make similar displays in Buffalo.

A new company for the manufacture of automobiles is being organized at Houghton, Northern Michigan, by C. J. Hodge, president of the Hodge Iron Company, of Hancock, and several Chicago men. The name of the car to be made is the LaPointe, a light car built on French lines.

The property of the Sintz Gas Engine and Automobile Co. in Grand Rapids, Mich., was advertised for sale at auction on January 28. The property consisted of machinery, engines, tools and fixtures, partially completed automobiles, engines and materials for the same.

Suit for $5,000 damages has been brought by the Rushmore Dynamo Works against the E. J. Willis Company of New York for alleged imitation of the Rushmore searchlight and sale of such lamps under the false impression that they are fitted with the Rushmore lens mirror.

A new feature of the Georges Richard-Brasier tonneau car is the direction of the exhaust against the lower part of each of the rear wheels in such a way that the dust raised by the wheels is blown backward away from the car so that it will not annoy the passengers.

W. K. Vanderbilt, Jr., and W. G. Brokaw have placed their orders for 120-hp. Mercedes cars with C. L. Charley; and H. L. Bowden and H. B. Stevens are seeking to secure similar cars William Wallace, another of the competitors in the Florida tournament, has already ordered a 90-hp. DeDietrich racer.

C. L. Charley, of Paris, who has the exclusive American agency for the Mercedes cars, has locked horns with the Selden patent. He has published a letter in the New York Press setting forth his views in the matter and offering to defend any suits brought against his customers by the owners of the patents.

The 20th Century Mfg. Co. continues to receive mail addressed to 17 Warren Street, New York, but as the new number, 19, is next door no inconvenience has been experienced. The new quarters are commodious and the office facilities are a big improvement over the former place of business so long occupied by this well-known lamp-making concern.

The racing motor boat designed for Frank Croker by C. F. Herreshoff, 2nd, has recently been completed in Providence, R. I. She is 43 feet long with 40 feet water line and is equipped with two 24-hp. Rochet-Schneider motors operating twin screws. She is controlled with levers and steering wheel like an automobile and is expected to develop a speed of 22 1-2 knots.

The Auto-Car Equipment Company of Buffalo, N. Y., has just been organized to manufacture electric automobile trucks. George W. Atterbury is president and E. B. Olmstead, secretary and sales-manager. Fifty trucks are now in process of construction to be used on the St. Louis Exposition grounds next summer.

Orders for several hundred of the new Pope-Tribune 6-horsepower cars built at the Hagerstown factory of the Pope Motor Car Company, were taken at the New York show, and $5,000 worth of new machinery is to be installed in the plant at once and 100 skilled workmen added to the force.

The exhibit of the Steam Carriage Boiler Company, of Oswego, N. Y., at the New York and Philadelphia Automobile Shows was ably represented by Miss Gertrude A. McCarthy, who was the only woman representative in either of the two shows. Miss McCarthy has full charge of the sales and advertising departments of the Oswego kerosene burner.

During the Philadelphia show last week the German and French Automobile Industry, with headquarters af 1517 Belmont Avenue, Philadelphia, sold two 40-horsepower Panhards, and one 12-horsepower Darracq to residents of that city and also sold twenty-five motorettes fitted with 6 to 12 horsepower De Dion-Bouton engines.

Reduced rates of a fare and a third to the Chicago show have been secured by the American Automobile Association for its members who wish to attend the annual meeting of the association to be held during the week of February 8 to 13. Return tickets at the one-third rate can be secured at booth 104 at the Coliseum on presentation of receipt of purchase of the full-fare ticket to Chicago.

A fire that started in the offices of the Mitchell Motor Car Co. at Racine Junction, Wis., on January 30, probably from an overheated stove, threatened the entire plant, but was got under control and confined to the office building, which was practically wrecked, furniture and records being destroyed and a loss of about $5,000 incurred. Beyond temporary inconvenience, the fire will not affect the company in any way.

The Energine Company has been incorporated with $10,000 capital stock by R. P. Beardsley, Frank B. Many, George G. Whitcomb, George H. Kelly and F. B. Williams. The purpose of the company as expressed in the articles of incorporation is to conduct an oil-refining establishment, but a specialty will be made of a peculiar fuel oil refined by a secret process for use in gas engines, more especially automobile and boat engines. The oil is said to be odorless and to afford a much higher energy than either coal oil or gasoline. It is also practically smokeless. The company will erect a refinery in Cleveland or vicinity.

F. B. Widmayer, 2312 Broadway, New York (on the old Boulevard at 84th Street), one of the pioneers in the motorcycle business, has closed with the Hendee Manufacturing Company to handle the 1904 Indian motor bicycle, tandem attachments, etc., and will carry a line of Indian bicycle parts. He will also handle the light, belt-driven Clément motorcycle. He now has samples of the 1904 Indian, Clément, Thomas, Marsh, Royal, and several other machines of his own build. He makes a specialty of motorcycle repairing, storage and all accessories.

The Globe Iron Works Company of Mineapolis calls attention to the fact that the engines in the Motor boat *Cherokee*, illustrated on page 29 and referred to on page 36 of our issue of January 9, are White gasoline engines made by this company instead of White steam engines, as stated. With regard to the run of the boat with the East Coast Canal Company officers and the Florida legislative committee on the tour of inspection of the waterway from Ormond to Miami, the Globe company writes that the roundtrip of 300 miles was made in five days, with one continuous run of seventeen hours in one day.

The new Northern touring car, manufactured in Detroit, will be ready for shipment to San Francisco about February 15.